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## *THE ASPECTS OF THE TEACHING PROFESSION.*

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An English author speaks of the teacher as "on the verge of being admitted across the uncertain line which separates an 'occupation' from a 'profession.'" * This sentence expresses, in a summary manner, but with great accuracy, the present condition of the teaching class. We aspire to a professional recognition, yet we are half conscious that we are not entitled to such a mark of distinction. Our notions of the marks that characterize the three recognized professions are not very clear; and we hesitate to assume rights that are at least questionable. Of the advantages that would come to the teaching-class from this professional recognition, all real teachers must be more or less conscious. The important thing, just now, is that we all have clearly-defined notions of what really constitutes a profession, and of what we yet lack of these essentials. It is certain that the world outside will hasten to recognize our professional claims when we ourselves have fully deserved them. Let it be our purpose, then, to discover the marks that distinguish a "profession" from a "calling," that we may thus put ourselves in a condition to estimate our resources and our needs. Let us know both our limitations and our possibilities, to the end that we may know what to do and what to leave unattempted.

Perhaps we may attain the best general notion of what really constitutes a profession if we liken it to an inclosed and fortified camp, into which none can gain admittance except on uniform, difficult, and explicitly stated terms. A profession is a body of men hedged about with rights, privileges, and prerogatives that are denied those who

* Laurie (S. S.), *Primary Instruction*, p. vi.–vii. (L. 1874).

have not received formal admission within the prescribed bounds. This prescription is either *formal*, as when the law determines the conditions on which men may practice medicine or law; or is *conventional*, as when the lines are traced and defended by public opinion. In Illinois, for example, the quack loses his occupation by mere force of law, while in Michigan it is the weight of public opinion that makes his calling disreputable. In the first case, public opinion has been translated into law, and professional lines are defended by force; while in the second, intruders are warned away by frowns, and trespass upon professional rights thus becomes a misdemeanor. So, too, in cases of minor importance, the law does not prescribe who shall practice in the courts, but "pettifogger" embodies the public condemnation of this trifling with even a citizen's minor rights; while in all courts of higher jurisdiction a formal admission to the rights and prerogatives of the profession is vigorously exacted. In the ministry the law makes no prescriptions, but each sect has its own set forms for admission to the privileges of preaching; and the minister or the church that does not respect these forms is cut off from fellowship, and the offender becomes an outcast. Let it be understood that in all cases where professional prerogatives are defended by law, the law merely interprets, expresses, and enforces the decisions of public opinion. The three learned professions do not owe their origin to persistent self-assumption, nor are they outgrowths of a spirit of caste; but are the exponents of that reverence that is instinctively felt for superior wisdom, skill, and worth. That wisdom which reaches over into the confines of the world of spirits; that skill which can rescue the body from death, or save it from the torments of disease; that knowledge which can defend our rights to life and liberty when assailed; these qualities transcend ordinary ability, — can be acquired only by long and patient devotion to study; and so, by universal consent, they bestow on their possessors peculiar rights, privileges, and prerogatives.

Let us stop at this point to examine the import of a word that to some is a rock of offence. I have spoken of professions as conferring privileges, and thus, by implication, I have asserted that professional bodies are privileged classes. I now wish to say, and without the thinnest shadow of concealment, that the professions *are* privileged classes. But the privileges so possessed and enjoyed have been earned, and hence are deserved. A man who, by industry and self-denial, has accumulated a surplus of this world's goods, may enjoy privileges to which his thriftless neighbor is not entitled. He may have an elegant house, rich furniture, pictures and books; he may

repose on a bed of down, or ride in an easy carriage; he may extend his knowledge and gratify his tastes by travel in foreign countries; he may prolong his life by purchased leisure and relief from inordinate labor; all these things he may have because he has earned them, and he may have them, too, even though his neighbor has none of them. Yet all these are privileges, — things that one may have and enjoy, and not another. Or, a man, through the resources of native talent, supplemented by studious, preparatory training, may acquire extraordinary skill in the treatment of the human eye. Such skill finds a ready market, and success in a line of labor involving interests of such supreme importance brings with it a high rate of remuneration, and soon leads to the accumulation of a fortune. The occulist evidently leads a privileged life; but his enjoyment of those privileges involves no injustice, because they have been earned, and are therefore his to have, to possess, and to enjoy. Shall we accord the butcher a just ground for complaint when he compares the pittance he receives for dressing an ox for the market with the princely fee paid the occulist or the surgeon? Neither law nor public opinion interposes any objection to a man's taking up the trade of butcher; but it permits only the privileged few to treat the diseases of the human eye. In fact, the work of this world is done on the hypothesis that privileges are the just deserts of merit. Else what would give inspiration to the toiling hand and the toiling head? Why weary ourselves to attain excellence, if excellence is to have no reward?

The three recognized professions, — Law, Medicine, and Theology, — have this characteristic in common, that they offer to men of talent the hope of a *career*, — *i. e.*, the opportunity of rising to distinction, either through exalted position or through wealth. Place, power, and fortune are the motives that influence most men to the exercise of their highest and best powers; and the three professions named are so attractive to men of genius because they furnish these opportunities for preferment.

Now let us go back to inquire on what grounds it is that public opinion bars the entrance to the profession of medicine, but imposes no formal conditions on those who purpose to follow a trade, such as carpentry. The first reason is, that the practice of medicine involves human interests that are infinitely higher than those that are involved in the common practice of carpentry; and that the consequences of ignorance or of malpractice are proportionately more serious in the first case than in the second. Our dearest possessions are life and health, and ignorantly to jeopardize either is a crime. The discomfort or pecuniary loss involved in bad carpentry is a matter of comparatively

little importance. But if the art of carpentry were generally to involve human life, then public opinion would demand the guarantees that are now required of the physician.

Again, in mere occupations or trades, it is easy to judge of the quality of the service rendered, so that no special precautions are enforced to insure inferred confidence. If, in a strange city, we need the aid of a tailor or of a shoemaker, we do not hesitate to address ourselves to any one who is in the line of service that we require; we infer the workman's competence from the mere fact that he is engaged in a given kind of labor; we assume that the service we require will be properly rendered, because it is within the range of ordinary skill. In those employments that chiefly affect mere material, incompetence is palpably and unmistakably announced; failure cannot be ascribed to occult causes, and ignorance cannot take refuge behind the mysterious and the unknown. The artisan is known by his works; he cannot practice on the credulity or the ignorance of his victims. But if we are sick in a strange city, we do not call a physician at random; we do not infer his competence from the mere fact of occupation, but from the specific fact that he belongs to a select class into which he could not gain admittance without a formal proof of fitness. To the eyes of the multitude the physician's art is shrouded in mystery; his processes are far beyond ordinary knowledge and comprehension. Here deception is easy, because men in general are incompetent to discriminate between the true and the false. The artful quack will have a large following, and his gains are levied upon popular ignorance. There are only two conceivable safeguards against the evils of empiricism; (1) a degree of general enlightenment that will qualify all men to discriminate between competence and incompetence; or, (2) an enforced preparatory training of a prescribed kind for the few who propose to assume grave responsibilities and to perform duties of extraordinary difficulty and importance. The solution of the problem by the first method is clearly impossible; people in general can never be educated up to such a point as this; if all had the talent required, they would not find the time needed to secure proficiency in a specific and difficult line of study. But if such a consummation were possible it would virtually obliterate all professional lines, for these are based on the fact that the few have knowledge and skill that are not possessed by the many. The only practicable safeguard against empiricism, against an ignorant and culpable trifling with the highest and dearest of human interests, is a training of a prescribed kind and degree for all who would assume such grave responsibilities and duties.

Let us now consider the fact that the prerogatives and privileges everywhere accorded the recognized profession are a tribute voluntarily paid by the multitude to exceptional knowledge and skill. Between "occupations" and "professions" there is this broad distinction, — that the first involve chiefly a trained *hand*, and the second a trained *mind;* that, in the first, muscular dexterity is at a premium, while in the second, mental acumen is the condition of success. Here are two extreme types of human activity, — the toil of the hand, in which the mind scarcely concurs, and the toil of the brain, which involves but a minimum of muscular energy. Now most men will devote themselves to that variety of labor in which skill is most easily attained; and so it follows that trades and occupations will engross the attention of the great mass of the human family. There will be many builders, but few architects; many soldiers, but few captains; many who follow, but few who can lead. Subordination is thus the law of human society; not subordination based on caste, or the accident of birth, but upon fitness for higher or lower forms of human labor. This law not only divides the world into two very unequal classes, — the many who must toil with the hand, and the few who may toil with the brain, — but it also determines a similar division of mental labor. In this limited field of human activity the lower and easier forms of intellectual labor will attract the many, while the higher and more difficult forms are held in reserve for the few. It is this last variety of labor that is strictly professional labor. This is the narrow field, doubly limited, of professional activity.

I have spoken of one variety of intellectual labor as lower and easier, and of another as higher and more difficult. What is the basis of this distinction? I have spoken of two generic varieties of labor,—one that involves a maximum of mental effort, and the other a maximum of muscular effort; and I have not hesitated to speak of the first effort as higher and more difficult, and of the second as lower and easier, — lower, in the sense of being within the reach of the multitude, and easier, as being readily attainable. And so of those varieties of labor that call into requisition the energies of the mind, — some are higher and more difficult; others lower and easier, in the same sense as before. Proof-reading and the practice of law are employments that rank under the higher of the two general categories first mentioned; they involve chiefly the exercise of the intelligence, and are therefore distinguished from manual employments. But these two employments, though both intellectual, have very marked and significant differences. In the first place, the lawyer needs to be a man of vast erudition; he should possess a body of ac-

cumulated knowledge bearing on his special field of duty, to acquire which a life-time scarcely suffices. To become sufficiently acquainted with court decisions and legal enactments involves an amount of reading and study that is appalling. But erudition alone will not suffice. Above all, there is needed that rare and supreme quality of mind called the logical habit, developed to a degree that makes it akin to an intuition and its possessor a genius; that habit that can discover all the bearings of a legal principle, that can interpret it with clearness and precision, and can thus include a given case under it, or show that it cannot be thus included. On the other hand, the proof-reader needs information, but not erudition; his mind must also be trained to detect differences and note resemblances; but the faculty of mind involved is scarcely deeper than observation. The difference between the mental equipments severally required is almost world-wide.

I have spoken of professions as inclosed and fortified camps, admission to which is hedged about with difficulties. I have shown how the public good and the public safety require that the conditions for admission should be vigorously maintained; and it is now easy to see the subjective difficulties that bar the entrance to the professions, and to understand the ground for that deference that is instinctively paid those who have secured an honorable entrance within professional lines. These difficulties are two: (1) There is a vast body of peculiar knowledge to be studied and mastered; and (2) there is required a type of mind that is possessed by only a comparatively few.

The body of knowledge needed for professional ends consists of principles, rules, or maxims, which the logical faculty employs for the solution of the specific problems that occur in the course of professional practice. It is not merely a knowledge of processes and methods, but of the principles which underlies them and give them their validity and their efficiency. It is *scientific* knowledge, because it permits the logical faculty to discern remote causes and to predict remote effects, because it permits prevision and revision. It is on this ground that professional men are men of science, clairvoyant and far-sighted; who can see clearly where other men are blind; whose vision reaches far beyond the point where ordinary vision stops.

The source of professional life, activity, and progress is that body of doctrine constituting the science whose outgrowth is a rational art. Processes are improved by making the transit from cause to effect direct, easy, and certain. The first solicitude of rational practice is therefore to discover the nexus that binds effect to cause, or

the route over which cause travels toward effect. Mere art sees only cause and effect; but rational art not merely sees cause and effect, but can trace the route traversed by energy on its way to its object. Improvement in professional practice must then come through the previsions of science; and the binding and inspiring force that insures professional unity and strength, is that body of doctrine whose principles determine rational practice.

But what is the ultimate source of that science which gives to the professions their inspiration, their life, and their growth, and which is their law of progress? It has been said, "Progress propagates itself from above downwards, and this to the farthest limits; for science never ascends." * From the very nature of things there must be a recognized source whence professional knowledge may be augmented, renovated, cultivated, and finally taught. This points unmistakably to a University connection; and it is an historical fact that the three typical professions owe their origin, continuation, and prosperity to the great seats of learning. From this analysis we now gather the following essential facts:

1. The Professions are close corporations, privileged bodies, whose membership is regulated by law or by the weight of public opinion.

2. Professional privileges and prerogatives are the tribute voluntarily paid by the uninitiated to superior wisdom and skill employed in behalf of the highest and dearest of human interests.

3. The only practicable safeguard against empiricism, or the ignorant and culpable trifling with life, liberty, and estate, is professional training of a prescribed kind and degree.

4. The Professions belong to that category of human employments involving the use of the intellectual activities; and, farther, are those intellectual employments which require the largest body of peculiar knowledge and the use of the highest faculties of the mind.

5. The knowledge required for professional ends consists of principles, maxims, or rules, which the logical faculty employs for the solution of the problems that occur in the course of professional practice.

6. Professional men are men of science, because they are armed with those previsions which only science can supply.

7. The source of professional unity, prosperity, and growth is the specific body of doctrine which is the rational basis of its practice.

8. The three typical professions have formal recognition in great seats of learning. This recognition is the source of self-respect,

* Le progress se propage de haut en bas, et cela jutqu' aux derniers limits; ear la Science ne remonte jamais."—*Boussingault.*

maintains an *esprit du corps*, and augments and perfects the body of doctrine that is the basis of professional practice.

Being thus furnished with the marks that distinguish "professions" from "occupations," let us now inquire into the actual condition of the teaching art, and thus, by comparison, determine its claims to professional recognition:

1. In this country the conditions for membership in the teaching-class are determined by law; and admittance is guarded by a formal examination. This official examination, conducted under prescribed forms, carries with it the implication that the interests committed to the teacher are of a grave character, and are to be expressly and carefully guarded. Here is certainly a distinct recognition of a teaching-class, and in this fact we have, seemingly, one of the marks that distinguish a "profession" from a "calling." But if we stop to examine the conditions of admission to what we will assume to be the profession of teaching, we shall find that the defences of our camp are of such a nature that they form no real obstacle to admission, and make no real distinction between professional and non-professional. The test for admission to the three typical professions is the possession of *peculiar knowledge*, attainable with difficulty, and therefore not possessed by people in general. What is the formal test for admission to the teaching-class? The possession of that kind and amount of knowledge possessed by every intelligent and moderately educated man and woman. This test, then, is formal and not real; these defenses are shadow and not substance. This discrimination is between ignorance and intelligence, and is evidently based on the assumption that the sole element in fitness to teach is a certain amount of general knowledge. This fact points back to the period when the ability to read was a rare accomplishment. But since that time, not only has the whole world learned to read, but the grade of general intelligence has been raised to such a height that, in point of mere scholarship, there is no determinate difference between the citizen and the teacher. Suppose popular education to be carried to such a degree that citizens in general have that knowledge which now distinguishes the physician. Then this professional line would be virtually abolished. If, then, the possession of ordinary knowledge is the test of fitness to teach, there is no real ground in law for re-organizing teaching as a profession.

2. But here, again, public sentiment is in advance of law. There is a vague but almost universal feeling that "fitness to teach" involves an element besides mere scholarship. Speaking generally, this feeling has no better foundation than the observed fact that men

and women of good scholarship often fail in their efforts to teach. There must be something lacking, though the unknown factor has not been defined and brought into consciousness. Besides, there is considerable respect for marked success in teaching, and, sometimes, considerable deference to the opinions and rights of the teacher, though there is no general admission of the fact that teachers have their vested privileges and prerogatives, such as are accorded the members of the typical professions.

3. Through the influence of advanced thinkers and writers on education, the fact that teachers need a special and technical preparation for their duties has been recognized in the establishment of normal schools. This marks a most important step in the history of the teaching art. According to the old conception, but a conception which is widely prevalent to-day, teaching ability was synonymous with general scholarship; while the modern, progressive idea is that teaching ability is general scholarship plus technical training in methods. The Normal School is the exponent and the embodiment of this advanced educational thought, and, I repeat, its creation marks an epoch in the history of education. The conclusive argument for normal schools, when reduced to its simplest expression, is that they are necessary safeguards against empiricism in teaching. The law now says that prospective teachers may superadd a training in method to their general scholarship; but it does not say that all who propose to teach must have this amount of special fitness. Still, this permissive act of legislation is the first real recognition of the professional character of teaching.

4. Up to this point I have been looking outside of the teaching art and the teaching class, in public opinion, and in public opinion expressing itself in law, for grounds that might justify me in including teaching among the professions. I now turn to the art itself for the purpose of discovering whether it has the intrinsic marks of a profession.

Of the two categories of human employments severally involving the resources of the hand and of the head, teaching unmistakably belongs to the second; it is an intellectual occupation. And it further belongs to that restricted number of intellectual employments in which rational practice involves a large body of peculiar knowledge and the use of the highest faculties of the mind. The teacher's art involves the perfecting of the mind through the elaboration and the assimilation of knowledge; and if his processes be rational he must be a master of mental science, and must be able to interpret the laws of the intelligence, and apply them to the getting of knowledge. I

need not stop to mark how abstruse a subject mental science is; it is sufficient to remember that even a liberal education usually stops short of a tolerable mastery of it.

5. The teaching art rests on a basis of psychological law; hence there are principles, maxims, or rules which the logical faculty must employ in the methods and processes of the school-room. Besides that general knowledge which comes within the needs and the possibilities of men in general, the teacher requires for his special duties a particular body of knowledge which is beyond the needs and even the possibilities of the ordinary scholar.

6. Furnished with such a body of doctrine as I have first indicated, the teacher may be a man of science in the same sense and to a similar extent that the enlightened and skillful physician may be; for he is armed with the previsions of science, and may thus penetrate remote causes and foresee remote effects, and may perfect his processes by making the transit from cause to effect shorter, easier, and surer.

7. It is evident, farther, that this body of doctrine is the only trustworthy source of improvements in the art of teaching. It is the only basis for the discussion of methods, the only ultimate criterion for testing the validity of rival or ambitious systems of instruction.

8. Finally, the art of teaching has received professional recognition, by the side of Law, Medicine, and Theology, in the Universities. That we may estimate the importance and the bearing of this act, let us record three very significant facts in their order of historical sequence. According to the earlier modes of thought, teacher and scholar were synonymous; a later, but still recent and even present notion, is, that teaching ability is general scholarship *plus* an empirical knowledge of methods; while the latest conception is that fitness for teaching involves three elements: (1) general scholarship; (2) a knowledge of methods; and (3) a mastery of that body of scientific doctrine that explains methods. Here we record three distinct and progressive epochs in the history of Education, three phases of thought bearing on the most comprehensive subject that can engage human attention. What is the bearing of these facts on the question of professional recognition? In point of mere scholarship there is now no distinction between the teacher and the well-informed man and woman; hence no professional lines can be drawn on this basis. When we add an empirical acquaintance with methods to general scholarship, there is distinctive knowledge that is enjoined on the teaching class, but it is not the kind of knowledge that can give a professional character to an occupation; for this high purpose

nothing but a body of doctrine will suffice, such as is implied in the study of education in the light of history, philosophy, and criticism.

In the last analysis there are three conditions upon which an art can claim the high distinctions, prerogatives, and advantages that are accorded the typical professions.

1. The art must involve the conservation of human interests of the first order.

2. The proper conservation of these interests must involve the exercise of extraordinary skill.

3. The possession of a peculiar body of knowledge, scientific in character and attainable with difficulty.

Any art which is practiced under these conditions, whose processes are rational or tend to become so, is virtually a profession whether it be called so or not; but no art, however exalted its nature or pretentions, can be admitted to this distinction unless it be pervaded by the scientific spirit; unless the body of doctrine which underlies its processes be cultivated, expounded, and explicitly taught; and unless, finally, the possession of this knowledge is made the test of fitness for admission to the privilege of practice.

The art of teaching certainly fulfills two of these conditions: it holds in its keeping the highest of human interests, and demands for the full attainment of its ends the exercise of the highest skill The third condition, the profession of an articulate body of doctrine and the indwelling and the inspiration of the scientific spirit, is but very imperfectly fulfilled. The practice of our art is chiefly empirical, *i. e.*, based on imitation and precedent. As yet, teaching is an art without an explicit science; the science exists, but its existence is not acknowledged nor even suspected by the great body of teachers; still less is this science generally cultivated, expounded, and explicitly taught. One of the most discouraging circumstances connected with our calling is the skepticism and indifference among even prominent teachers as to the existence and value of educational science. We may see why it is that the organization of chairs of education in some of the leading Universities of the world* marks an era in the history of education, and gives to every real teacher new hopes and a new inspiration.

Finally, if it be asked whether teaching can ever be a profession in the strict and limited sense in which law and medicine are professions, I unhesitatingly answer *No.* The reason, though not explicitly stated, has already been given. Fitness for teaching involves two

*Edinburgh, St. Andrews; Cambridge, University of London; Missouri, Iowa, Michigan, and Harvard.

distinct factors: (1) general scholarship or literary culture, and (2) a body of special knowledge accompanied by technical skill. So far as general knowledge goes, every well-educated man or woman has partial qualifications for teaching. There is an element of truth in the popular belief that scholarship is synonymous with teaching ability. Recalling the figure already used, if we liken the professions to inclosed and fortified camps, on one side the approaches to our camp are open to the multitude. If, however, admission to our calling were conditioned on the general possession of that special knowledge which constitutes the science of teaching, then it would be a profession in the least sense of the term. But of all who teach, only a very few design to make teaching a permanent calling. Only a few will therefore study their art in its scientific aspects; only a few will *profess* teaching, *i. e.*, devote to it their time and their talents. Notwithstanding this fact, there will be a teaching profession. Out of the large number who teach, a few will be master-workmen, and these will know their art, both as a series of processes and as a philosophy. With the teaching of educational science, men of talent and culture will here find a field for the exercise of their best powers, and the professional body of teachers will be thus reinforced.

# EMANCIPATION OF TEACHERS.

BY W. N. HAILMANN.

If any country needs free teachers, teachers who know no authority beyond the natural, logical laws of their profession, it is surely our own, — "the land of the free." The very basis of our institutions is freedom, perfect self-determination, full equality before the law and before the possibilities of life. Freedom and America have come to be convertible terms; and, other things being equal, the worth of a citizen depends on the degree of freedom attained by him, — for only in the measure in which we are ourselves free, can we respect the freedom of others. Hence the education for free citizenship, for freedom, is the most important concern of our schools, ranking all others, however weighty; and it is the fact that our public schools, — less than all others trammeled by outside considerations, — are best prepared to lead to free citizenship, that entitles them to be respected and fostered as the "palladium of our liberty."

Now as love is inflamed only by love, as thought is fired only by thought, so freedom alone can kindle freedom. A servile education may train slaves or despots, but never free men and women. Hence we find even in Republics of our day comparatively little freedom. The church, society, the State, low passions, — more particularly a brutal egotism that manifests itself according to circumstances as cowardice, as regardlessness, or even as cruelty, — hold every one more or less captive. For this reason progress is slow, because a servile generation cannot educate a free generation. It may, indeed, as the experience of our blessed country proves, lead it steadily toward liberty, if it is actuated by this yearning, but it can do this only in the measure in which it emancipates itself.

Of course, freedom does not mean here the unimpeded indulgence of all desires and aversions, according to chance, whim, or passion; such a freedom were that of the despot or of the licensed slave. Freedom worthy of man is always moral, — *i. e.*, it rests on a true appreciation of human relations, of good and evil. Freedom, self-determination, gives us rights; morality, duties. Freedom permits us to decide what we shall do or abstain from doing; morality bids us do nothing that might work injury to humanity, to leave nothing undone that might work benefit. Freedom grants us the exercise of our faculties; morality enjoins us to use these faculties in such a way that others may not be deprived of freedom; nay, that they may be

enabled to enjoy it in a higher degree. Thus each one has the right of personal liberty, but not the right to make others his slaves, and hence, too, the duty of preventing the enslaving of others. Each one has the right of free speech, but not the right to withhold this liberty from others; and this right imposes the duty to protect others in the right. The same is true of all fundamental rights; the claims upon life, happiness, the use of the earth, property, etc.

Moral freedom, true liberty, always implies corresponding duties; is hedged in, as it were, on one side by the negative duty of not infringing on the freedom of others; and, on the other side, by the positive duty of protecting others in the same freedom.

Only in this sense shall I use the term emancipation of the teachers, as a liberation from unjust and undue oppression or control; but, at the same time, as a conscientious self-preparation for a moral use of the freedom thus obtained. The teachers must, indeed, be set free; but, before entering upon the exercise of their functions, they must be sure first that no injury will come from their work, and secondly, that they will further the interests of those intrusted to their care. You will see by this that purely tentative teachers, mere bread-and-butter pedagogues, or stepping-stone interlopers of both sexes, have no business with this sort of emancipation. It is only for true and full men and women who feel their responsibility, and are prepared to assume it efficiently.

The first fundamental condition of freedom is external independence. Hence the free teacher, too, should have to obey in the discharge of his duties only the inner requirements of his profession, only the laws of his science, or laws that are in accord with his science; he should be independent of every authority that has no place in his science, or that does not rest upon his science. For how can he who himself serves extraneous authority, educate his pupils for freedom, for independence from such authority? We see this variously exemplified in many great school systems, — so-called, — of our time, which in many, perhaps in most, cases serve non-pedagogic masters. They petrify, they are hostile to reform, they grow nervous and even vindictive under criticism, they are always at the top of the ladder, there is no Excelsior in their dictionary; they may modify their methods, but they rarely modify their aims, — it was the three R's twenty years ago, and it is the three R's to-day. It would be useless to inquire how far the disadvantages of great school systems are due to their extent. Such so-called systems or complexes are, now at least, an unavoidable necessity; and the practical question for us is, What position should the teachers hold in these, in order to be

enabled to educate the youth of the land for freedom, for free citizenship? From what has been said, it may fairly be argued that this is possible only, if in the exercise of their duties they are free to follow their own science, the science of pedagogics.

The objection that, as yet, there is no science of pedagogics, or that pedagogics has not yet risen to the full dignity of a science, has nothing to do with the question; for it would be easy to show that whatever shortcomings there are in pedagogics, they are chiefly due to the servile condition in which teachers have been and are held, and that only the emancipation of her votaries can raise this science to the level of other free sciences. If the seed is to germinate, take root, and push stem and branches into the free air of heaven, where it may blossom and bring forth delicious fruit, it will not do to confine it in a box and set it away on some convenient shelf; it must be planted on its own soil and left to unfold freely, according to the inner laws of its being.

Now it is highly problematical that teachers will always, or at least generally, be permitted to follow the light of their science as long as they are controlled by persons who are strangers to the science of pedagogics. Our first demand, then, must be this: All official authorities that control the teachers, *as such*, should be chosen from their profession, or at least from those who have a professional knowledge of the teaching-science. If you should ask who is to choose these authorities, I might boldly answer, the teachers themselves. Yet this is opposed by a great number of practical difficulties, and by weighty considerations of justice. In the first place, the parents assist in the work of education, and so far as their own children are concerned they have even a greater interest in the work of education than the teachers. Again, to the State, respectively to the citizens composing it, the educational interests are the most vital concerns. Hence the parents, — both father and mother, — and the citizens as such,—both male and female, — must choose these authorities from among those whom experience, and, perhaps, the profession, designate as the best. Surely an emancipated profession could make its influence felt in such elections, and reduce the number of blunders to a minimum.

On the other hand, admission to the profession of teaching should, in all cases, depend wholly upon the judgment of its members. No more than can admission to the bar be intrusted to physicians, or consent be accredited professional practice of medicine to lawyers, can fitness for teaching be determined, even with approximate safety, by merchants, barristers, doctors, and artisans. These may decide on the score of scientific attainments, of character, and the like; but

professional qualifications can be judged only by those versed in the profession, and surely these should decide. Professional schools and commissions, made up of wise and experienced teachers, should alone conduct examinations for admission to the profession. The school authorities may then choose their teachers from among those so admitted. Such a proceeding would prove a very efficient safeguard against imposition. The profession, through its examining commission, has determined the general fitness of the applicant, and the local board inquire into his or her special adaptation to the local work. It may not rld us wholly of inferior teachers, but it will surely shield the little folks against the pernicious infliction of a learned tramp, a hopeful graduate, or an aspiring seamstress.

Once admitted to the profession, elected, and installed in a position, the teachers must feel secure in the discharge of their duties. The whims of the inspector, the wrath of the superintendent, the dislikes of influential patrons, and the wiles of the position-seeker should have no terror for them. They must feel that only neglect of duty, want of efficiency, immoral conduct, or decided uncongeniality of temper can remove them from their positions. In all cases the accusation must be distinctly and explicitly made, the accused persons must have a fair and impartial hearing, and his or her fate must be decided by a tribunal of competent members of the profession. This may seem cumbersome when compared with the present expeditious modes of "dropping from the list," asking to resign, or dismissing at the end of the week, as you would, perhaps, an incompetent or disagreeable menial; but it is more just, and justice cannot be contemned with impunity. It is also more expedient, for by securing teachers against injustice and wrong, by relieving them of unworthy and harassing care and enhancing self-respect, you increase their efficiency in a wonderful degree, and induce the very best men and women to seek the ranks of this honored calling.

This, it appears to me, must be the ultimate aim of the external emancipation of teachers: the control of the work by the profession, admission to its ranks by the profession, and dismissal from official position only for cause and with the concurrence of a professional tribunal. Anything short of this is patch-work, or a merely transitional phase of the process of emancipation.

A more important inquiry for us, however, is, How shall this emancipation be accomplished? Who shall emancipate us? To this I can find but one answer: We must do it ourselves. This is the lesson of history, and it is the lesson of reason. Whoever would be free must free himself. Even when, as in the emancipation of negroes in the

South, the external liberation is accomplished by others, the more important internal emancipation, the inner fitting for freedom, so that its possession may be acknowledged as deserved and therefore genuine on all hands, is the business of the emancipated. Political freedom has been given the negroes, but social freedom they must deserve. The emancipation of woman from the time-honored tyranny of male bones can be accomplished, and is being accomplished, gradually and surely, only by women themselves. All male championship of women's rights is merely a concession wrested from just and right-thinking men by women who have proved to them that woman's head, heart, and hand are the needed and equal complement of man's. And how is it in our own calling? Where has woman succeeded in securing the same remuneration with man for her work? Where she has clearly proven that her work is of equal value, and not anywhere else. For the cases where the pay for man's work has come down to the pittances formerly paid to women only concern us here merely in so far as they show the truth of the reverse proposition, that where men's work is only equal to the work of inferior women, the inferior remuneration will in due time be justly awarded to both.

Freedom, as was shown at the outset, has a moral side, — implies duties, forbids injury and enjoins usefulness. Freedom may be granted or achieved, but unless the duties it implies are fulfilled satisfactorily, it will be, and ought to be, lost again.

On the other hand, duty well fulfilled will be sure, even in the ordinary course of events, to lead to corresponding emancipation; and if those concerned are conscious of unjust or improper delay, and assist the natural course of events, or hasten the advent of their well-earned reward, only duty well-fulfilled will justify them in this course.

Now since a freedom that could not be retained without injury to the whole, — in our case without injury to the interests of education, — would be of no value, it is above all things necessary that the emancipation of the teachers should be placed on a sound basis; that it should be built on a rock that will withstand all the attacks of its enemies, and there is no other such rock as duty well fulfilled.

In our efforts, then, looking toward the emancipation of our profession, our first and foremost concern is to look to ourselves; to make ourselves masters of our science, and adepts in our art; to contribute, each one according to his power, to the growth of our science, and to the liberation of our art from the fetters of routine and the mire of pedantry.

Unless we ourselves reverently recognize in our work the truths taught by our science; unless we ourselves are fully imbued in our

work with the lofty enthusiasm that comes from a full appreciation of the high aims of our art; unless a clear perception of the light our science has to give, renders our inmost being athirst for "more light"; unless we are fully aware of the difficulties that beset our work, and deeply conscious of the responsibilities it involves; unless, in a word, we ourselves honor and respect our work as a free profession, — how can we expect those who stand aloof to honor and respect it as such? The mere fact of being *called* teachers does not justify our emancipation; it is needful that we *be* teachers, — *i. e.*, good, efficient, progressive, growing workers in the field of education, to entitle us to professional freedom.

The pedant, who would palm off his few crumbs of outside learning as the sum and substance of all wisdom; the routinist, who fancies his own particular rut the golden road to knowledge; the hireling, who sacrifices principle for bread, or betrays truth for position; the youth, who uses the teacher's rostrum as a way-station on the road to influence or wealth; the autocrat, who deliberately disregards the laws of child-nature whenever they clash with his own will or whim; the fogy, who turns pale when he hears the word reform; together with the host of incompetents to whom teaching is merely an occupation, and who will submit to any indignity for the sake of their position (or monthly pay), are not fit for emancipation; the only just reward for these is suppression in the fullest sense of the word. Emancipation, — full, permanent, genuine, — can and ought to come only to those who steadily, earnestly, unwearyingly labor to deserve it, in conscious efforts to do their duty in the light of the science of their calling, and of the highest ideals of humanity.

Nevertheless, although our emancipation should be primarily and ultimately our own work, there are other conscious factors in education whom interest and duty should prompt to assist us with all their mind and might. First among these are the parents, who are responsible in the highest degree, not only for the outcome of their own direct educational work with their children, but for all educational influences they permit to be exerted. It is of the greatest moment to them that those who have charge of their children's schools, should be fully competent to discharge their duties efficiently and with the greatest possible benefit to their children. Is it needful to show that this can be done only by teachers who deserve emancipation? And would a right-thinking father, would a right-feeling mother, in the "land of the free," withhold emancipation from those who deserve it? Or would they prefer to intrust the education of their child, destined for freedom, to a slave rather than to a freeman? — to one

who is guided by their fancy, or to one who follows his own superior light of truth? It is easy to say what they ought to do, but what they *do* do depends wholly on their own insight, on their own emancipation from prejudice, error, and egotism.

In the next place, educational authorities, boards of education, regents, supervisors, superintendents, and others, if they have a just appreciation of their duties in the premises, should spare no pains to hasten the full-deserved emancipation of the teachers. For is it not their sworn duty to see to it that the public funds set apart for educational purposes be used to greatest advantage? And can this be done except through the appointment of truly professional teachers, who stand on the firm rock of their science, and who, armed with good will and high endeavor, would lead the children toward the highest ideals of humanity and know how to accomplish this?

"Ah, but how and where shall we get such?" they will ask you, with the smile "*now I've got you*" on their lips. Make them establish professional schools, encourage institutes and teachers' associations, place a premium on professional excellence, make teaching an honored and honorable calling and sufficiently remunerative occupation so that the best will follow it. "And what shall we do now, when so few deserve emancipation and so many are incompetent?" Do the best you can! Emancipate those who do deserve it, so that others may have an encouragement to rise to the same level, and you get rid of hopeless cases as fast as you can. What would you say of the superintending physician of a great hospital who, because the majority of his nurses were incompetent, would insult even those he knows to be reliable by annoying limitations and degrading control, and even in their pay keep them down to the level of his incompetents, thus driving them into occupations where there is more responsibility, and consequently more honor and — more pay? And can anything better be said of you, if you follow the same course of action in your schools?

Thus I might go on and show to what extent and in what degrees it is in the interest and duty of other professions, of cultured men and women, of citizens, as such, to aid in the emancipation of teachers. Yet, in all cases, it is needful for *us* to remember that, — so far as we are concerned, — we can have no claim upon actual emancipation except on the plea of duty well fulfilled.

## *SOCIETY IN ACCOUNT WITH THE COMMON SCHOOLS.*

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INSTITUTIONS that vitalize, or produce the growth of vital forces, must themselves contain vital forces. The acorn which has life in itself to transmit to an organized system of forces the oak, is itself the product of an organized system of forces, and the new oak extends to us its shade and beauty, and serves us with its strength, in virtue of the life it derived from the previous living activities. We may trace on paper the process and the stages of its development, the material which is to be in the soil, and which must be laid hold of and fashioned into the new being. The life, the real agency of growth, does not manifest itself to the dissector's knife, but only through the continued operation of the life which it has transmitted. But the essential operations of this life make known to us some of its characters; for it is said, in fact, we only know matter from what it does. Hence, given a new purpose sought from these forces, we know how to adjust their conditions to the accomplishment of this purpose.

First, then, what is the purpose of the system which we would establish, — the work it is to do? To educate, it is said. Yet if this word *educate* could at once be reasoned out of existence, good as is the service it may possibly have done in its day, it would be a long step toward the better understanding and the better doing of our work. We have been so long familiar with the phrase, to educate faculties, to lead out, develop, unfold faculties, that we come to think that what we have to do is to sit down beside our victim with the proper instrumentalities for e-du-ca-ting, pulling out, dragging out, any way to get out his faculties. It would be an interesting sight to observe a person who entertains this idea, in that fullness in which it is often sought to be inculcated, sitting down beside an acorn, or an oaken twig, and racking his brains after the best methods of e-du-ca-ting the twig and swelling its trunk into larger proportions.

In the days when chemical science had just started into new life, it became necessary for medical writers to forewarn their readers that *digestion* was not maceration nor chemication, but *digestion*, — an operation of vital forces, and to emphasize the principle, *vis medicatrix naturæ*. Scientific agriculturists had also to modify the first ideas of Liebig, regarding the supply of nourishment to plants, recog-

nizing more fully the peculiar nature of vegetable life, and the necessity of calling forth its activities, instead of doing away with the necessity of such action. And fertilizers are now not administered ready dissolved, nor even easily soluble, but rather in insoluble compounds which only vital forces can separate and appropriate. Men have in these days learned from experience and observation that the action of vital forces within the tree is the main dependence for the enlargement of its body and the multiplication of its branches; the production of its larger vital forces which are, in turn, to be transmitted. They have learned that man's chief office is to stimulate these vital forces, and to place within the reach of the plant's organs the materials which they are to use in building themselves up. Let us think a little slowly and see what are some of the facts that induce mental activity, and thus the increase of mental power. Let me set forth, for a moment, great things by small. While Superintendent in Toledo, I had a room where I brought, at certain stages of their work, several classes of pupils of the same grade, and gave them common tests, — in simple matters but necessary ones, as preparatory to their future progress in the schools,—especially in the writing and adding of numbers with rapidity and exactness. The pupils of the older teachers used to stand at ninety or ninety-five per cent.; those of the new or inexperienced teachers stood at thirty or forty per cent. After this exhibition of what the schools of the older or skilled teachers could do with the same opportunities, since the classes came from the grades below to all these teachers at the same time, the new teachers and their pupils could, and usually did, make as much progress in their work in the two weeks following these tests as they had done in four or even six weeks before this lesson. The teacher was not so much taught how to do her work, as she and her pupils had been placed in a new atmosphere, with new but natural stimulating influences.

Every one can now see that this personal, concrete lesson was worth a dozen abstract arguments, however persuasive the superintendent may have made these arguments. Inside of the new teacher and her pupils has been compactly and firmly established a high order of sentiments.

1. The strongest possible motives for effort have been presented to them in the most forcible of methods,—example and contact with the fact. These low per cent. schools stand related to these higher per cent. classes as fellow-pupils,—social instincts are awakened. 2. The certainty is impressed upon them that a standard may be, and will be, exacted for promotion along the course, — personal interest is awakened. 3. These other pupils have only our capacities, and they have

done twice our work in the same time. If they can do it, we can do it. Confidence has been inspired. Finally, I *must*, I *ought*, I *can*, ripen into a very potent "*I will.*" And, now, with opportunity and wise direction, we have in our system the elements of success. The rain and sunshine have bathed the latent possibilities of the acorn, and if the materials on which its powers may act are present in the soil, and these conditions continue, we shall in good time have an oak.

Let me illustrate further by a mere reference to other facts. We send our daughters to various musical centers in Europe to make them *prima donnas.* Why not transport the teachers here? We should not succeed. We never did succeed in making *prima donnas* thus. When we have become earnest for success on a larger scale, and begin to organize musical choruses here, we have set to work to create *musical centers,* as in Boston, New York, and Cincinnati. We shall make progress in the production of artists, then, in proportion as we build up art-centres here, create art-atmospheres here. Some of our cities are making this effort regarding music, the art of design, carving pottery, and perhaps in other directions.

For still further illustration of my thought, study the influence of the musical culture attained in such communities as the Yorkshire cities, an influence so potent in quickening the growth of the musical faculty in their people, that writers on heredity are almost ready to claim that the musical faculty, such as it is now known there and in other such communities, has been *created* as a new faculty within a few centuries.

Study also the secret reasons why the great seats of learning, like Oxford, Cambridge. Yale, and Harvard, like Eton, Rugby, and Exeter, are so successful in the production of great scholars and great men. How largely is it all due to the traditions, the sentiments, the character of the great men that still linger within the walls, and grow there as their characters are expanding elsewhere? There is a saying that you cannot make an accomplished weaver out of a South-of-England farmer, while the Flemish child takes as naturally to the formation of beautiful fabrics as a duck takes to water. The stimulus to this effort operates on him from his cradle. If these considerations serve their purpose, they are drifting us toward my first proposition; namely: that *the first essential requisite of a good system of public schools is such a quick and energetic public sentiment regarding them as shall furnish a constantly operative stimulant in all classes who are to be included in the effort to educate.* The influence of a portion of a community will do much. A really inspiring teacher will

often leaven the maturer elements in his school, so that great vitalizing power will speedily manifest itself, and thus the high school will often be, and it should be always, a wonderfully quickening influence over the schools below. But all the forces of society should be so organized and directed as to work to this end. As well expect the acorn to germinate in the frozen soil, or the oaken twig to grow there, as the most studied system to achieve success in educating the youth of a community which disparages the work of educating all the individuals of the community. All this means simply that man is a social being. His motives for action arise out of this pregnant fact. The quality of his acts, as righteous or wicked, have reference mostly to their effect on society. Their quality as wise,—promotive of his own best good; or foolish,—tending to his personal disadvantage,—depends largely, if not wholly, on their tendency to bring him into advantageous relations with the social activities around him, or the contrary.

The strength of every State in reality, of the Roman State, *e. g.*, grew out of the wide recognition of this equality of privilege and independence of interest among Roman citizens. Its downfall resulted from the sharp contrasts arising out of the limitations of this idea to the Roman citizens alone. The sin of the Middle Ages, resulting in the moral and intellectual death of the race for one thousand years, consisted in the effort to nourish the few into splendid conditions, while the many were left to breed pestilence both moral and material. The church, *i. e.*, the whole social life in that case, was built on the suppression of the individual. It would have been just as wise to try to build a State or a community on the policy of stopping the physical growth of the masses in infancy, and making a nation of dwarfs excepting as to the few. A true society requires the use of all of the intellectual and moral powers of its constituents, as its defense and industries require their full physical development.

The first divine designation of man was that he is a being not fitted to be alone. The continuance of the race is conditioned on his *relations* through sex. The same law of dependence is established by the meting out to individuals, not all the faculties necessary for attacking nature from every standpoint, but distinctive faculties, fitting him to do distinctive parts of the work required to supply the expanding wants of the individual in society.

The growth of each individual toward perfection in society is conditioned on the growth toward perfection of *all* the individuals constituting society. A man can fashion a bow and a fishing-spear for himself. But let him even start toward civilized and cultured con-

ditions, and he at once requires the aid of increasing thousands of his fellows in proportion to the number of steps he takes in this progress. He can here fashion one or two things that he requires, and if these are to approach the perfectness of form, or of adaptation to use required by a highly civilized man, he can only make one or two of the ten thousand things he wants. Ten thousand other men must be raised up around him to make good bread for him, which he cannot make good, and which a coarse, uncultivated boor cannot make good for him; to make good butter for him; to cook his meats well; to work up his wools and cottons, and linens and silks, into articles of taste and comfort; to plan and construct his house, his furniture, his harnesses, his carriage, his cars, his steamboats, his books, his newspapers, his pictures, his statuary, his telephones and telegraphs.

If a man is content to eat coarse, unsavory food, and to live in primitive homes; in other words, if he is content to live a half-civilized life, he may afford to see but half of his community civilized, able to use their possible skill to administer to his wants. But in making the individual, as to his ability to supply his own higher wants, only the ten-thousandth part of a man, the Creator has made each one, as to his capacity to enjoy, and his ability to possess the means of large and full happiness, ten thousand men in one by this very arrangement. But all this is conditioned on the individual's working in harmony with the laws of the man as created and as existing from the hand of God, who made *man* and not *a* man, but man as consisting of the interdependent individuals required to compass the general purposes of society, as no individual man is capable of doing. The branch of a tree is nearly as complete of itself as a man is complete and self-capable in and of himself.

Ambitious,—that is, wicked,—that is, unwise,—men always strive to run away from this thought, and to gain satisfaction through relative superiority instead of through absolute excellence. Relative superiority may be reached by pushing or keeping others down, and the happiness secured in this way may be enjoyed in as high a degree, in the wigwam or among *chiffoniers*, as in the palace or among commercial kings. But absolute excellence and its enjoyments, as we have shown, come only through the general excellence attained by the community, and this may be as well enjoyed by the million as by one; while that happiness derived from mere relative excellence can only be enjoyed by one or a few in each community, and the accidental success of a rival gives the death-blow to the happiness thus derived.

Christ's *"Our Father"* expresses the central thought of his philosophy. *"All ye are brethren"* intends to announce this interdependent

brotherhood of the race. This brotherhood is not a sentiment. I am not speaking of social relations, but of utilities in society. It is a fiat interwoven into the nature of man. It cannot be run away from, and I repeat that the recognition of this fact, announced at the creation, is essential to the proper operation of a *public* or *common* school system. It is the soil out of which must spring all the tribes and generations of thought, the motive, the enthusiasm, the warming, vitalizing public opinion in which such a system is to live, move, and have its being. Out of this idea must grow its course of study. Not all knowledge, not all skill is requisite or possible to a man, to the individual. They are in the aggregate requisite and possible to man, to society, as made up of men, of individuals. Our system of education, which should embrace, as a science, the full life of the man, must seek the realization of this breadth of knowledge and skill in society. The *public schools* are to deal only with the underlying generalities of the effort, those certain essentials, — in great part instruments, both as knowledge and discipline, — that sustain a common relation to the activities that are to be largely differentiated in the *upper* departments of an educational system, — our colleges and professional schools, our apprentice system, and in the still higher departments of that educational system, the locomotive platform, the workshop, the forum, the studio, professional life. Our ideas of an educational system will yet, must yet, embrace all this in the public mind, before we can adjust even our elementary schemes to their work, and be content with this adjustment. This carries with it the thought that the fiat that planted these facts in the constitution of society, man, provided the fact, also, which every philosophical educator must sooner or later have discovered, that while not all knowledge or skill is requisite or possible to each individual, as a contributor of his part to society, so the acquisition of all knowledge or skill is not necessary to the full development or perfection of any individual man. A man is perfect, not when he can do all things well, but when he can do all *his* things well. The mechanic may be perfect as a mechanic, an original, intelligent, inventive mechanic, *a* man, without a knowledge of Greek. The same may be true of a physician. The Greek and Latin *professor* cannot see how a doctor can know the uses and diseases of the *acetabulum* without knowing the etymology of its name. Yet his vaporings on this subject disturb but little the scrutinizing judgment of the physician *educated* in the large requirements of his science. I need not stop here to say to educators that I have always advocated classical education in proper cases.

The thought I have tried to develop emphasizes to imperativeness

the responsibility of each recipient of the benefits of this organized thing we call society; to contribute his full share to the uses and pleasures of that society, and to fit himself for doing this. Each man owes this to himself, and to his own family for whose happiness he is directly responsible; since only through a perfect *society*, all of whose *parts* are performing their distinctive functions to perfection, can the individual or the family arrive at their best and safest and freest conditions. The physician, *e. g.*, must burden himself with a proper course of preparation to perform properly his offices to me, or I suffer; my family leave me for the grave. *I* must exert myself to instruct his children well, or he suffers. But each parent and citizen also owes to all the interests in which he is concerned, to see to it that other individuals that make up society are educated also. The individual has no right to refuse his part. Society has a right to insist on it, and has no right to fail to insist on it, or to neglect its duty to provide for and foster this preparation. But this imposes burdens on us all! Yes, and why not?

The short-sighted novice in music curses the restraints which philosophy imposes upon him. But the philosophical teacher knows that only by a knowledge of the laws and principles of his art, and by a system of discipline and restraint in conforming with these laws and principles, can he arrive at that rapturous freedom in the exercise of his art which characterizes only the greatest masters. He knows that these masters have unbound *their* clumsy fingers and their halting faculties only by possessing their minds of the great laws of order and harmony, by becoming acquainted with the true nature of the things with which they have to deal, and through such discipline and mastery as bring mind and fingers into accord when bodies of musicians are to act together on the great masterpieces. The novice runs his fingers over the keys, and has *some* delight in his ability to make a savage noise. The artist lives a large life of freedom, of power, of pleasure, in a high realm of law to which he has climbed through self-denials and individual restraints. Only such masters of art and of the laws of art can act in freedom and in harmony among each other, and these can do it with rapture.

So the true philosopher will learn that only through this recognition of the true conditions of social progress, will he find himself and each of his fellows in the enjoyment of individual freedom, through the conformity of each individual interest to the general interest. Had I space here to develop the relation which organized instrumentalities, or *institutions*, as well as individuals, sustain to the growth or perfection of the greater organization-society, and thus this

to the growth and happiness of the individual, the necessity that each *institution*, or grouping of individuals, and of working forces, should be rendered perfect in its relations to the distinctive purposes of each and of the whole would, I think, distinctly appear. It would be seen that the taxes or restraints that any of these institutions impose on the individual, tend eventually to the lightening of individual expense in the effort to secure happiness, and to the essential enlargement of that individual freedom, or individual liberty, possible to each. The restraints of a Sabbath, and its cultivating institutions, *e. g.*, are easily seen to contribute to the larger individual freedom hitherto only possible in this country as compared with that possible in some other countries.

The expense, as well as the restraints and self-denials, imposed upon different members of a community in the support of a system of public schools, have for a long time been dimly seen to contribute to that condition of things in which freedom is possible, and not only consistent with order, but tributary to the highest and securest order. The right of the State to tax men to support a system of public schools has been held to rest on the supposed narrow requirement of society for order as productive of individual freedom, such as ours in America. In the light of our argument it may be seen that this single idea embraces all that the most religious and philanthropic man can ask a system of education to do, since it implies for its full and successful accomplishment the free and full growth of the faculties of each individual, and the development in each individual of those desires for individual success which render a man active in the performance of his individual duty. The work of educating, then, no longer confines itself to the teaching of the three R's. It embraces preëminently the awakening of *ideas* and *sentiments* relating to success in life. The State, society, is not alone interested in the mere *intelligence* of the individual, but much more in his relations to success in his special calling, not only that he may contribute his part to the civilizing instrumentalities, but as the only way in which his intelligence will lead him to regard order as requisite to his freedom to develop practical results, and the freedom of others to do the same. Society is interested in the thrift of each individual, and it will demand that not only the knowledge and skill shall be developed, but that also those virtues which are essential to the securing of comfortable conditions shall be inculcated in the schools, such as self-denial, prudence, temperance in the gratification of artificial or unnatural tastes, temperance in eating and drinking, a high regard for institutions and arts which promote culture and virtue, such as music, liter-

ature, etc. It will demand that, above all, a high sense of social justice and social responsibility shall be inculcated, to manifest itself in the effort, not only to present a pure personal example, but also to promote, by other means than by example, pure character in others.

Men stand aghast at the prophetic rumblings of an unreasoning and relentless communism, and well they may. It is a more serious thing, I believe, than many of us dare speak above our breath. I verily believe,—and I am not constitutionally a croaker,—that a more thorough study of this problem of public education, and the development of higher thoughts regarding it than have ever prevailed, is our only safeguard against this communism.

A perverted system of religion has tried to content and to hold the masses through fear of the assumed power of priests to open and shut heaven, and through imaginary divine rights of single men to the obedience of these masses. These shackles have forever fallen from the necks of these masses. Machiavelianism has striven to repress these masses while in an ignorant, unreasoning, half-barbarous condition, by the superior cunning of the few. The wiles of this superior cunning no longer embarrass the multitude. Correct reasoning, and a greatly extended power to reason correctly, is, I believe, the only safeguard to society. To right reason there is no difficulty in the present conditions. With unreasoning passion to control the masses, the dangers thicken on every side, in proportion as the mere authority of self-constituted leaders ceases to be respected. The teachings of our progress hitherto are exceedingly instructive to us, and wholly reassuring. Every privilege that has hitherto come to the masses has given additional privilege and luxury, and even positive power, to the privileged. The lightning.speed of the railroad, with its royal Pullmans, and the luxuries it brings to the rich man's table, are possible to these rich only *because* they have so cheapened the means of travel and transportation that all may ride and may purchase these luxuries, thus making it an object to transport them to the rich. I can but hint at a thousand intimations that the privileged classes have nothing to fear, but all to gain, by the real progress in privilege and culture of the masses.

An exceedingly important conclusion to which this thought is, I hope, directing us is the certainty that the science of education is to be regarded as the highest science in the catalogue of important sciences, and that it is to engage the powers of the most vigorous thinkers of the day. This is a most manifest essential to the full success of a public school system. This subject is to-day the largest human interest. It embraces a much larger segment of our human

life than this interest has been supposed to cover. It will go beyond the school-room into practical and social life. It will embrace a consideration of varied industries as a direct means of education in every community, and will add importance and interest to questions of political economy, such as tariffs and local manufactories. Its thorough development as a science will greatly modify our elementary courses of instruction. When the work of systematic education no longer ends with the common school-room, the *elements* of culture started there will be better mastered, and the nervousness regarding the *early ripening* of these elements into so-called *practical knowledge* will largely disappear, as also the distracting burdens imposed by this nervousness. If a boy cannot spell the words *Psychology* and *Metaphysics* at the age of ten, *e. g.*, he will not be despaired of, nor the system condemned, since he will be sure to know how to spell these words if his continued course of culture leads him into familiarity with the subjects which these words name; and since, if he is not so led, he will not be regarded as an idiot because he cannot spell them. Ditto regarding the practical knowledge of many other things which cannot be practiced in schools, and which special callings will render practical through the *practice* they require, and a practical knowledge of which would be of no use in other special callings.

Again, — in the coming public school system, it will be deemed an essential that the minister of education shall be a minister of education and no longer a *mere* gatherer of statistics, having only the right to beg some third-rate legislator, who has not the capacity to make a speech on railways or town taxes, to give a stray hour's study to this subject, that he may bring this hour's study to bear on school-education in the single hour which our legislators now seldom find to devote to this *all*-important and worthy subject. But such a minister should hold a place on the floor of National and State legislatures in this country as he does in England and her provinces, and in other countries, in order that he may present to these legislatures the results of his mature and life-long thought for the perfecting of the school systems of the country.

When this true system shall come, the committee which has in charge the matter of presenting subjects for school legislation will no longer be exclusively made up of yesterday's farmers or lawyers, who have given the subject no time or attention, but who, of course, have confidence in their ability to solve all the intricacies of the subject in just proportion to their want of acquaintance with it. In that time a standing committee, or State Board of Education, made up of the best practical talent in each State, educators and others, will have

power to present measures for the action of the legislature, after long and mature study of the subjects.

But, if all this is true, or half of it, a *most* essential requisite of a public school system is a full man or woman to conduct it and instruct in it. The new citadel of safety will be manned with wisdom and girt about with strength. Instead of its work being committed largely to girls and boys without reasoning power, original or acquired, or to martinets trained in special schools, or narrow experiences in school-life alone, the people will call to their aid, especially in our larger cities, which ought to lead in the matter, a body of large-minded, level-headed, thorough thinkers, cognizant of the great wants of the age, with the great tendencies of the age, and capable of moulding the system, establishing its practices, and linking its work on to the daily interests of society.

This carries with it several important particulars as essential to the procuring of such talent and ability for the work. The chief essential here has already been referred to as necessary to the internal working of the system itself; and that is, such a warm social interest in the matter as will direct the best and most cultured minds to assume and maintain an interest in this work. But culture can only result from cultured surroundings, as we have shown. Hence one of the most essential requisites of the coming system is such a social position for the teacher as will render the highest culture available in the schools.

There is no use criticising the teachers of our schools for their short-comings in matters pertaining to the formation of character, and of deploring the want of power in their schools to eradicate the grounds of fear from communistic tendencies and the dangers of ignorance and prejudice, so long as teachers are taken so largely from classes whose narrow means force them to adopt teaching to gain their bread, and are then denied such social recognition as will alone occasion that cultivation of the graces which give power to hold the best born to their best level, and to raise others toward that best level.

We may say this will impose impossible burdens on the well-to-do and cultivated portions of society. Very well; it is the price, as I believe, of their privileges. If these persons think that proclamations from pulpits, which few people hear except those who are almost as safe as the preachers themselves, will save society without the thorough education of the people, or if they think they have Machiavelian cunning to maintain themselves against the power of ignorance and prejudice, it is for such to take the responsibility of their theories. Besides this you have, under the lead of Jefferson and the other

fathers, pronounced for the enfranchisement of all classes of men on a general conviction of its necessity for the purpose of good order and good government, and for their enlightenment as a corollary to this. We but seek to add to this general notion, that natural incite ment of essential personal interest which is the heaven-ordained incentive to all human activity, and is not only, in its proper action, consistent with the general good, but is the only true promoter of the general good. The man who sweeps the snow from his own sidewalk is thereby not only accommodating his neighbor to this narrow ex tent, but he is taking the best course to secure its removal from all other sidewalks for his larger benefit and that of all of his neighbors. Under a peculiar condition of intellectual activity we have revolution ized, or evolutionized, several of the sciences, and have set their new forces to most practical work, all within forty or fifty years. We have converted religion, within the same time, from a system of dogmas, and from what was largely a scheme of priestcraft and kingcraft, to its original purpose of forming the characters of men for the uses of a high order of society. Both of these efforts have tended to enlarge the privileges and improve the condition of the masses of the people. Have they injured or humiliated the better few? Far otherwise. Shall we, with these lessons, continue to distrust intellectual and moral forces as the middle ages did, and still largely cling to gibbets and dungeons to secure safety to society? The time seems most propitious for the consideration of this subject. The popular feeling in all parts of the country during the interest excited by the assassination of President Garfield was tender, fraternal, and patriotic in an eminent degree; this feeling having culminated into expression through a providence that pointed strongly in the direction of our thought. Our hearts were magically knit to the heart of a man who, like a larger number of our great and useful men than ever before, lifted himself out of what are called the lowest walks of society into an honorable quality of life, in which all acknowledge a sensible personal interest. This peculiar expression of feeling, so spontaneous, so personal, so universal, is the index to a great civilized and civilizing human interest in all of the great capabilities of our race, a recognition of their use and serviceability to each man of us and to all men.

May we not, then, in the midst of the inspired and inspiring thought and work of our generation, in the way of conquering to the use of men the wonderful forces of the outer world, assume that we are ready, at length, to welcome, in the fullness of its benevolent and practical design, this higher inspiration to establish a truer social

system, founded on no fiendish desire to level men down to a common death of all individuality, but on the supreme effort to level ourselves and all others up through opportunity and encouragement, through a recognition of the fact that perfect conditions of all the parts, the true interests of the individual, are attained only through the perfection of his larger self, society?

So let us build for the State our ship,
Laying square each block upon the slip;
With royal purpose and royal will
Let us fit, with energy and skill,
Whatever timbers grow around,
Covering *all* this hallowed ground, —
Timbers of chestnut and oak and elm
Into gliding keel and governing helm.
But follow well this plan of mine:
Choose the timbers with greatest care,
Of all that is brush and frail beware;
For only the well-knit, sound, and strong
To this vessel shall belong;
Cedar of Maine and Georgia pine
Here together shall combine, —
A goodly frame and a goodly fame,
And the Grander Union shall be her name;
For the day that gives such ship to the sea
Brings us larger and safer liberty.

## COLOR-NAMES, COLOR-BLINDNESS, AND THE EDUCATION OF THE COLOR-SENSE IN OUR SCHOOLS.

BY B. JOY JEFFRIES, A.M., M.D., HARVARD.

IT is not always remembered that the eye has, so to speak, two senses; viz., form and color. The sense of form and the defects of the eye interfering with it have been very thoroughly studied the last five and twenty years, and some knowledge of the same diffused in the community, who now recognize the words myopia, hypermetropia, or astigmatism, etc. Teachers and educators have naturally heard a great deal more about myopia and its being caused by school-life, the dangers arising from it, and its prevention.

The sense of color has only been quite recently studied in such a way as to bring an acquaintance with it within the scope of the general community. For the sense of form the eye, as a *camera obscura*, has to be very perfect, and quite complicated in its power of adjustment. For the sense of color a very simple eye will suffice. None of the accommodative apparatus of the organ need be present. The media need not be transparent, as is required in form-perception. The crystalline lens may be opaque,—namely, cataract,—and yet the eye be able to appreciate color quite well, when its form-perception is reduced to light and shade.

For both form and color-perception the eye is most perfect in the center, from here outwards becoming more and more defective. Look carefully with one eye at a word as long as "constitution" on an ordinary printed page, and it will be seen that in reality only the first three or four letters are distinct. The muscles of the eyeball turn it so easily along the line that we hardly notice that it is only the centre of the retina which perceives accurately. Now the same is true of the sense of color, which is also best at the yellow spot, as it is called, in the centre of the retina. Look steadily forward with one eye while the other is shut, and at the same time move a small bright-colored object, as a red wafer, gradually from the centre of the field outwards. One will be surprised to find how soon it loses its color and appears, finally, black, whilst its outline can still be dimly perceived. There is a central zone in which we see the three primary colors,—red, green, and violet; around this another, in which only two, green and violet, are seen; and outside of this, the rest of the retina perceives only violet or blue. This, at least, holds true under ordinary illumination.

After gazing at an object for but a short time its picture remains upon our retina, turn our eyes away as we will. This is the so-called after-image. On awakening in the morning, when the retina from rest is more sensitive, and looking steadily at some picture with a dark frame, then turning the eyes away, we shall see it wherever we direct our gaze; but the frame will appear of the reverse, namely, white. Now this is also true as to color. If we gaze at a green disk across the room, and have it suddenly removed, a red or pink one will appear in its place. The after-image, as it is called, will always assume the complementary color. These facts, amongst many others relative to the normal color-sense, are often unrecognized or forgotten. Their bearing on colored signals, by night or day, is, of course, a very practical one.

All over the civilized world communities are being awakened to the curious facts connected with the defect called color-blindness. These facts, hitherto regarded as of simply scientific interest, have assumed a practical value, which forces them to be recognized even by those who would officially ignore or suppress them because they come counter to their own ignorance, prejudice, or pecuniary interests, etc.

Investigation of a railroad accident in Sweden, supposed to be due to color-blindness, led Dr. F. Holmgren, professor of physiology in the University of Upsala, to the belief that the defect must be frequent, and hence dangerous on both land and sea. Difficulty arose as to any certain method of detecting it quickly. The absence of any such method has been the especial reason why the defect has hitherto escaped observation. Using the theory of Young-Helmholtz, and applying a test suggested by Seebeck, he finally brought out his now well-known method with the colored worsteds. By this, and the imitations of it devised here and there, large numbers of persons have been examined all over the world, including both sexes, all colors, ages, and degrees of civilizations, etc. It is a curious fact, that till the expert could test quickly and accurately, the existence of color-blindness to the extent now proved remained unknown. It is now admitted that four per cent. of males are more or less color-blind, and in females not over one-fourth of one per cent. are thus affected. My own tests, up to the time of writing this, are of 19,101 males 801 were color-blind, whilst I found but 11 females among 14,731 defective in their chromatic sense.

Color-blindness may be said to exist as red, green, or violet blindness; the first two including each other, and the last involving blindness to the complementary color; viz., yellow. Violet-blindness is so

rare that the term color-blindness means, now-a-days, red or green blindness. It will be noticed how these colors correspond to the sensation derived through the three retinal zones before described, etc. Whilst the mistakes as to colors a color-blind makes are very characteristic, and seem most extraordinary, yet when we come to define what the defect is, it will be found not so easy or simple. Perhaps the best conception, and one most readily retained and kept in mind, is this ; viz., that to the color-blind (red or green-blind) all colors containing either of their two defective ones become so much darker, and seem as if they had been made with gray, or black and white mixed. This, of course, is in proportion to the amount of the color-blindness and the amount of the red or green in the given color.

Color-blindness has not been detected by present methods of teaching colors by charts, colored objects, etc. It has escaped detection even where the best methods were employed by very intelligent teachers. This, however, is not so strange when we realize how it is not discovered in every-day life, and that even the adult and educated color-blind are found ignorant of their defect, often stoutly resenting any lack of chromatic visual power.

Recent extended research has proved some facts in relation to color-blindness which must be taken into consideration in relation to teaching colors in the schools. It is a congenital defect, and, as has been said, much more frequent in the male than in the female. It is hereditary, and follows the general law of heredity. Females, though they escape it, transmit it to their male offspring. As there is no rule without an exception, so here also the defect has been found in all the females of several generations of one family, and only in them, the males, normal-eyed. It may occur congenitally in *one eye only*. Several monocular cases have been seen and carefully examined by very competent observers. Age, color, race, civilization, or occupation do not seem to have any influence on its frequency to judge by present statistics.

The color-blind who can be put into the so-called hypnotic or mesmeric condition have temporarily been able to see colors normally ; also the normal-eyed who can be put into this condition are rendered, for the time they are so, like the color-blind as to chromatic sense. Injuries which affect the brain may cause what is practically color-blindness, and in one eye only. Such cases are recorded. It has long been known as a symptom of certain cerebral affections, or cerebral and ocular troubles described in ophthalmic treatises.

A condition of chromatic defect simulating perfectly color-blindness is produced by chronic poisoning from alcohol and from tobacco,

or both combined, — not but what thousands of people abuse both these stimulants without having their chromatic sense interfered with. It is meant only that when they produce serious trouble, often most insidiously: then the person is dangerous as a signaler on land or sea, for his power of seeing colors may be below the normal. The *in*temperate lecturers, who have recently quoted the writer as having explained the greater amount of color-blindness among males by their greater abuse of alcohol and tobacco, have, of course, made the story out of whole cloth. It is, however, too strong an untruth for them not to continue to do so, notwithstanding any remonstrance.

Congenital color-blindness is incurable, but may be somewhat palliated. It has been long known that in artificial light (not the electric) the color-blind did not make such gross mistakes, and more readily concealed their defect. Now, looking through a piece of lemon-colored glass, equivalent to gas-light, will help the color-blind in daylight or in electric light. The same is true of looking through a solution of gelatin stained with the aniline red dye, called fuchsine. There is no temporary or permanent change of the color-sense from all this, but simply alterations of light and shade which the color-blind have learned, unconsciously, to avail themselves of. This very interesting point, as also how they learn to escape detection, cannot be here dwelt on: it would need an article longer than this.

Congenital color-blindness is *incurable*. No amount of practice with colors, or familiarity, will alter the color-sense. This is now so well understood and recognized that it would be but a waste of time to argue about it. The idea arose, first, from some observers supposing that children were color-blind because they did not know the color-names of objects, and that this was cured when they had learned and could remember these; secondly, from the color-blind themselves and their surroundings, imagining that the defect was altered or remedied because it was, even unconsciously, more easily concealed. The bearing and force of all that has so far been said will be apparent when we sum up the facts; viz., that color-blindness exists in four per cent. of males, that it is incurable, and that it most readily escapes detection, no methods of teaching colors exposing it. There are four boys out of a hundred who can never be made, by any means we know of, to see colors as the other ninety-six readily do.

The only way we have of knowing how a sensation affects another person is by what they say or what they do. Now, as to the effect of color on the brain, we cannot trust the tongue in color-names. The color-blind *may* use the same names as the normal-eyed, hence we must cause them to exhibit their mental impression by muscular

effort. This we can readily do in methods of testing dependent on the principle of *comparison*. Of the comparison-method, Holmgren's, with colored-worsteds, is by far the simplest, and can be made use of in the primary schools without introducing anything new. A *correct selection* of worsteds is only required, and these can be employed in the object-teaching now introduced almost everywhere. A full description of the method will be found in my manual, "Color-blindness, its Dangers and its Detection." This should be a reference-book in the schools, accompanying a standard set of worsteds. If, on the study of the description of the test and the application of the latter, the principal or teacher fails to decide the presence or absence of chromatic defect in a scholar, then an expert can be consulted, and must be; because not only should the principal or teacher not waste time over a color-blind child, but the parents or guardian ought to know of the defect. It is most important that there should be the earliest knowledge and recognition of color-blindness, since it must affect the child's future career and choice of occupation, etc. I found color-blind children of railroad engineers in our Boston schools whose one idea was to follow their father's employment. In a Savannah school I found two brothers color-blind whose father was a Savannah pilot. Fortunately the present United States laws would prevent these boys taking up their father's profession. But not only where there is *danger* from color-blindness should warning be given as to the child's future. In all employments where a recognition of color is important the color blind are debarred, as experience amply proves. It is cruel to let them unconsciously take up occupations in which their defect will surely cause them to fail, sooner or later.

This examination of the color-sense which has gone on in the last few years in various parts of the civilized world, has developed a hitherto unrecognized fact; namely, the extraordinary ignorance, on the part of males, of colors and color-names: this not only with school-boys of all social grades, but even among quite well educated adults. During the first six months of my work testing in our Boston schools I could not believe my eyes or my ears, and the teachers were as astonished and with difficulty persuaded of the truth. The same experience has since been reported by all examiners in Europe. Girls learn colors and color-names from occupations and home-life, dress, etc. In a general way it has been presumed that boys did the same, till the reverse has gradually dawned upon us, resulting from continued absolute experiment.

The lack of a knowledge of colors and color-names is, however, quite a serious drawback in very many occupations, especially among

our manufacturing and artistic industries, etc. Why do not males discriminate colors and shades as females do? Simply because they are not taught them systematically, and they have no opportunities of learning them out of school. The higher the social grade of boys, the more they will be found to know of colors and color-names from home-surroundings. It may be, however, quite as important that the lad who is to seek his living as an artisan, should be instructed in colors and color-names. The necessary teaching can be carried out with no further time devoted to it than is now wasted in what is considered instruction.

The last quarter of a century has shown how the ear, the voice, and the hand can be trained and educated. In the sense of form the eye has been wonderfully taught. The sense of color has been almost totally neglected. That it can be equally taught and educated there is abundant proof of in the extraordinary delicacy of the sense attained by so many workmen in colored fabrics, etc., mosaic setters, and the like. It is not here meant that methodical and careful education will develop the sense in the individual beyond its natural power, but that such teaching will enable the eye to discriminate *within its range*, as does the ear within its range, etc. On the other hand, it is equally not *denied* that generations of teaching *may* heighten the color-sense and render it more acute. It has lately been proved that the sense of sight and hearing exists to a greater degree in uncivilized men, where these qualities are required to obtain food by the hunt, or escape danger from enemies, animals, or men.

It is very evident that teaching color in the schools must embrace the detection of color-blindness in the boys, the learning the names of the commonest colors at least, the sharpening the appreciation and discrimination of colors, and thus the gradual education of the color-sense. To do this, instruction must commence in primary or Kindergarten work, and be steadily pursued through school-life.

Colors must be taught, and not simply the color-names of colored objects. A blind child will give the name of the color of grass, trees, apples, bananas, bricks, its companion's clothes, and perhaps even hundreds of objects the color-name of which it has learned. So also the color-blind boy will do the same. It is one thing to learn the color-name connected with a remembered *object*, and a very different thing to connect the right name with the sensation a green color arouses. Here has been the mistake which object-teaching has rather fostered than corrected.

Any method must be systematic and thorough, commencing at the very bottom. How little was accomplished in educating the ear, the

voice, and the sense of form for the eye, till correct principles were understood and acted on. Nothing can be accomplished in color teaching till the mistakes of the past are understood, admitted, and corrected. The very means adopted have but helped to blind the teacher and the educator in the belief that colors were being taught, when, in reality, nothing but names associated with certain objects were being remembered. The color-blind boy can, as I have seen, point out the colors in the charts heretofore used, as well as the normal-eyed. A certain spot in a certain position on a large card has a name attached to it which he remembers, and this is all he has learned. It is very true that many a teacher, disgusted with the charts, blocks, etc., placed in her hands, has discarded them all, and gathered together larger or smaller collections of colored paper, worsted, ribbons, etc.; but no exercise with these has revealed the characteristic mistakes of the color-blind boys she has taught. I have detected color-blindness among the best-taught classes. I have witnessed the best color-teaching, and there was really nothing in it which would inevitably detect a defect of the color-sense. It would not have astonished me at all to have found, on trial, one of the exhibited boys color-blind. I found in a factory a color-blind man engaged in cutting up colored board into cards. His fellow-workmen would not, of course, admit his defect, but his employer had experienced a "destruction of stock," and could appreciate the characteristic mistakes he showed with Holmgren's test, etc. It is not expected that this idea of the need of connecting a name with a sensation will be received at once, as it seems so to militate against every-day knowledge. It will, however, gradually show itself in the systematic color-teaching, which is here argued for. Practical illustrations in our schools would much more readily prove this statement.

When early in my work of testing the many thousands I have, I recognized the ignorance of color-names and lack of appreciation of colors, etc., I endeavored to work out some method of teaching which should be of avail. I became convinced that any method, to be successful and meet the necessary requirements above formulated, must be based on the principle of comparison, by which alone we get hold of the effect of color on the brain itself. I saw at once why all the means hitherto adopted and officially accepted had failed, and I readily understood why intelligent teachers had dropped them as useless, and why they were always so interested in what I had to show and say about systematic methods based on the true principle of comparison.

I worked out mentally certain plans of instruction, and found how others had done the same. I could contrive none which satisfied me

as meeting the wants which my experience in the schools called for. When I finally received from Dr. Magnus of Breslau his color-chart and method of teaching, which was awarded an honorary diploma at the International Medical Congress at Amsterdam, in 1879, I decided that he had best solved the problem. He had reached the solution through exactly the same training I had passed through; viz., continued work in testing and studying the color-sense in the schools. It has much interested me to see how this method has been spoken of by the gentlemen in Europe who were best competent to judge; viz., those who had found out from personal experience in examining the defects existing and the special needs in any color-teaching. All examiners who have written about their work agree as to the ignorance of colors and color-nomenclature, and the existence of color-blindness in the boys, not suspected heretofore, and not detected by any of the methods employed in color-teaching.

The continued attempts in Europe, only partially successful, to print colored plates to test for color-blindness have shown the great technical difficulties with all color work. Fortunately such insurmountable difficulties do not exist in reference to Dr. Magnus's chart. Still these have been such as to prevent Mr. Prang from preparing the chart up to this time. This he will soon do. With it will be an explanatory pamphlet which I have adapted to the needs and peculiar condition of our primary teachers in this country. The fundamental idea of the method is to first teach children colors, — that is, render their eye familiar with them,—and after this, the names of the colors. Thus we shall avoid their simply connecting a color-name with an object, as can a blind boy or a color-blind boy. This method of using the principle of comparison has been carefully worked over by several teachers and educators, who have kindly given me their opinions, suggestions, and criticisms, especially in reference to my explanatory pamphlet. All these fortified me in the deductions I had made from my own personal experience in many thousand tests of people of all ages and all classes.

In the use of this chart of Magnus's a color-blind boy will, sooner or later, make such characteristic mistakes as to call the teacher's attention to him, especially as these mistakes are described in the explanatory pamphlet. Thus the chart, being based on the principle of comparison, will serve the purpose of teaching colors and color-names, and the *probable* detection of color-blindness. Such teaching will be a new era, and the first commencement of systematic color-teaching. Upon it, as experience unfolds the needs and necessities, can be built up in the future the whole fabric of advanced color-

teaching, and that will in the future educate the color-sense within its present power of education. Whether generations of color-teaching will finally alter the chromatic sense in males, and thereby reduce the proportion of color-blindness in that sex, it is certainly at present useless to affirm or deny. It is with no such idea that this chart is introduced into this country; and it is not brought forward with the idea of detecting color-blindness by it: it is only claimed that it is a very simple and practical method, based on the true principle of comparison, which, in practical use, will most probably, as no methods ever have, warn the teacher of a child's chromatic defect when present. With it, in every school where it is used, should be a type-set of Holmgren's worsteds and the manual adopted by the U. S. Government for medical officers of the army, navy, and marine-hospital service as to pilots. My manual I recommend because there is no other in English, and it will be invaluable to the primary or grammar teacher, or superintendent, as a book of reference. In most of the primary schools of the large cities of this country are already collections of worsteds, ribbons, paper, etc., costing much more than a type set of correct worsteds, now readily obtainable.*

This type set of worsteds will serve for the object-teaching as now conducted. A set lasted me for ten thousand examinations in the schools. All the worsteds now on hand, as also the ribbons, paper,

*TESTING FOR COLOR-BLINDNESS. — The method of examination adopted is the one fully described in this manual, namely, Professor Holmgren's, with certain colored worsteds. This is also the test used by medical experts in detecting color-blindness amongst *railroad employés*, and the one used in the schools, and in the recent investigations of the color-sense of uncivilized tribes in various parts of the world, a mutual language not being necessary for examiner and examined.

The value of the test depends upon its being carried out strictly in accordance with Professor Holmgren's directions, given in this manual. For this purpose it is absolutely necessary to have the *correct colors and shades of worsteds*, which are not easily procured, therefore, —

*At the Meeting of the American Ophthalmological Society at Newport, July* 25, 1879, *it was resolved*,

"That Dr. B. Joy Jeffries be requested to make such arrangements as he may find practicable to enable the members of the Society and others to procure suitable collections of colored worsteds for testing color-blindness."

In compliance with this request the following arrangement has been made with the undersigned: They agree, on the receipt of $2.50, to send by mail, postpaid, to any address, a complete and accurate set of worsteds, including the *tests*. On the receipt of $4.50 they agree to send, postpaid, to any address, a set of the worsteds *and* the manual of Dr. Jeffries above referred to.

N. D. WHITNEY & CO.,
129 *Tremont street.* Boston, Mass., U. S. A.

silks, etc., can be equally well used as before; but a full type set of worsteds are sufficient for all object-teaching purposes.

In 1869, I criticised "optics and the eye," as taught at the universities.* I consulted with the professors teaching these branches, and went over the subject in the various text-books on physics. I showed the apparent utter ignorance of authors and translators as to the modern researches of such distinguished physiologists, also well-known in general science, as Helmholtz and Donders. My criticism had some effect, as I found that the Harvard students were allowed to omit the many pages of antiquated theory in "Lardner's Optics." Moreover, the late Professor Snell, at Amherst, was at the time preparing another edition of "Olmstead's College Philosophy." Desiring to have it correct and up to time in respect to the eye and optics, he came to Boston, and we went over the whole subject together. The result was his incorporating the researches of the above-mentioned physiologists, and introducing reproductions of the diagrams, etc., I used in my lectures on Optical Phenomena at Cambridge. This is not the place to discuss whether the text-books are *now* correct on the well-known points concerning the organ of vision: I merely speak of the matter to show how, year after year, the same mistakes are repeated in and taught from the text-books, till some one takes the trouble to point them out, and is persistent enough to overcome publishers *stereotyped* pecuniary considerations.

Dr. Magnus's color-chart, which I propose introducing as the simplest and most practical method for commencing primary color-teaching, is not based on any *theory* of color or color-perception. There must, however, naturally follow it color-manuals for the upper classes precisely as there has in reference to form-perception in drawing. Just what such further and higher instruction may be, and how carried out, will depend on this primary work and how far it can bring the scholar. A true foundation of color-instruction must be built up first, on which can be erected a thorough scientific and practical education in chromatics.

The first step, however, in further instruction leads us to the necessity of speaking of, deciding on, and teaching the primary colors. To help break the way for the true primaries, which science can alone admit,—viz., red, green, and violet,—I would here call attention to the fact that, still in text-books, color-charts, and even educational reports, the primaries are spoken of as red, yellow, and blue; as if Helmholtz had not, thirty years ago, showed Brewster's mistakes in experimenting. Scientific men may even think me ridiculous in

* Boston Medical and Surgical Journal, Aug. 5, 1863; pp. i.–iv.

introducing so settled a question here. Teachers and educators, however, realize that it is time some step was taken to clear up the text-books, and stop, at least, false instruction.

I have met, where I least expected it, such total ignorance of the fact that red, green, and violet *were* the real primaries,—so proved by science,—that, whilst to defend myself seems almost puerile, yet I must refer doubters to some standard works within their reach.

Professor Ogden M. Rood says, in his "Modern Chromatics," p. 109: "This theory of the existence of three fundamental kinds of light,—red, yellow, and blue,—is found in all except the most recent text-books in physics, and is almost universally believed by artists. Nevertheless, it will not be difficult to show that it is quite without foundation."

In von Bezold's "Theory of Color," translated by Mr. Kœhler, and published in 1876 by Mr. Prang, is, on page 128, the following: "Red, yellow, and blue were generally looked upon in former times as the fundamental colors, the results obtained by the mixture of pigments having been accepted as a basis. Later investigations lead to the conclusion that green must be substituted for yellow, and a variety of reasons might be cited, all of which speak unanimously in favor of assuming *red*, *green*, and *blue*, which borders closely on *violet*, to be the fundamental colors."

Another book within the reach of all teachers is Alfred M. Meyer and Charles Barnard's little manual on "Light," where the true primaries are explained. Too many of our Boston teachers have had opportunity, within the past few years, to hear Professor Cross of the Institute of Technology, in his Lowell Lectures and the Art Society Lectures, *prove* to them experimentally the true primaries, to be willing to accept and attempt to teach from any text-book red, yellow, and blue as primary colors. A reading-book was recently rejected by the Boston School Supervisors because two chapters about colors taught the old fundamental errors. Our text-books and readers must be made scientifically correct, to open a true path for the future further teaching of colors and the education of the color-sense.

## *THE TRAINING OF STATESMEN.*

BY CHARLES F. THWING.

THAT a man should be educated for the work he purposes to do, is an obvious truth. That, therefore, if he intend to devote his life to statesmanship, he should be trained for the performance of political duties is equally clear. But the question arises, What is the character of that education which best fits one for public service? Is it general? Is it special? Is it such as the English and American statesmen have received? Is it such as they would gain in the schools of political science that are established in several American colleges?

The Englishmen who have in the last hundred years been influential in political life have, with a few exceptions, been graduates of one of their two great universities. Disraeli was not a university man, neither is John Bright. But the large majority have enjoyed a university course, throughout which a seat in Parliament has been the goal of their ambition. Many of them have stepped as naturally from a lecture-room at Oxford or Cambridge on to the floor of the House of Commons as an American graduate passes from the college to the law or the theological school. The younger Pitt soon after leaving Cambridge took his seat in the House of Commons, and after a short interval was made prime minister, at the age of twenty-five. The very year of 1806, in which Palmerston took his M.A. at St. Johns, Cambridge, he declined an election to the House of Lords as representative peer for Ireland, and entered the lower branch. Earl Russell was chosen to Parliament upon the completion of his education, at the age of twenty-one. Of the two Earls of Derby of our own time, the elder entered Parliament soon after graduation at the age of twenty-one, and the younger the very year he left Trinity College, Cambridge, became a member of the House of Commons. Peel, after his course at Harrow and Oxford, took a seat in the House of Commons at the same age at which Earl Russell and the fourteenth Earl of Derby were inducted into political life. Gladstone was elected to Parliament in the year succeeding his graduation at Oxford, in 1832.

With a few exceptions, then, the only special preparation of leading English statesmen for political life has been found in the regular work of the university. Yet it is to be noted that this regular work includes not merely mathematics, classics, and other studies, as they are pursued in American colleges with a slight regard to the future of the student. Those to whom a seat in the House of Commons be-

longed in the family succession studied, if to study they saw fit, with the assurance that public life was as certain as the continuance of physical existence. And yet students of untitled families, as Gladstone, pursued their university careers with public life in view. They desired to enter public life. They knew, fifty years ago, that their ability and the favor of friends would open for them the doors of the House of Commons.

Thus, studies at the universities were pursued under a strong political bias. In a sense, young men read in the light of a future public life. The interest young men therefore manifested in politics was intense. The debates in the Cambridge Union were at times so hot-tempered and partisan that the University authorities interfered in the management of the association. In 1820 the vice-chancellor, though opposed to its political tendency, consented as a compromise for the club "to take into consideration public affairs of a date anterior to the century." * But the passion for the discussion of current political questions was so strong that it was found not impracticable to debate them under the guise of the past. That Catholic emancipation should have been granted in 1795, or that the English commercial policy before 1800 should have been based on the principle of free trade, were topics that invited broad methods of treatment. The English universities have, at all times of deep political interest, gathered up and sent forth strong political influences. Young men living in a political atmosphere, with a political career before them, cannot be otherwise than well-trained for the duties of statesmanship. Their preparation for public life is indeed most unlike that of Charles James Fox, of whom Trevelyan writes that "his outfit for the career of a statesman consisted in a few superficial prejudices, the offspring rather of taste than conviction; a few personal alliances which he had formed for himself, and not a few personal dislikes which he had for the most part inherited from his father." † The training of English statesmen has thus been of a general character. But it may be added, that as soon as most educated Englishmen enter the House of Commons they have given special study to the problems of government. It is not to be forgotten that Macaulay wrote in the "Edinburgh Review" for 1839, in reference to Gladstone's first book, that "we are much pleased . . . to see a grave and elaborate treatise on an important part of the philosophy of government from the pen of a young man who is rising to eminence in the House of Commons."

The training of American statesmen has been both like and unlike

* Macaulay's Life and Letters; I., 84.

† The Early History of Charles James Fox; chapter iv.

the training of English political leaders. Several have attained not only to high official position, but also to great political influence, without special training. And yet a larger number have become prominent by means of the help of the college. John Quincy Adams was a graduate of Harvard, and was born and bred in the midst of influences which proved the best preparation for the work either of a president or of a commoner. Webster was a high-ranking student at Dartmouth, but it was eleven years after graduation that he entered Congress. Calhoun was seven years out of Yale when, in 1811, he was elected to the House of Representatives. Sumner, while at Harvard, gave special attention to literary topics, but it was not till 1845 that he actively entered into political discussion, and not till six years later that he was chosen senator. Likewise American statesmen have seldom won important political position or influence before the age of thirty, and the average age exceeds thirty-five. And, further, in pursuing their studies, few of them have had public life in view with that degree of certainty which the young Englishman of half-a-century since had the right to entertain. They could not enter the domain of public life without being elected to important offices, and an election depended not upon the will either of a single family, or of a small constituency, but on the choice of thousands of voters. As a rule, therefore, they have in college pursued general studies preparatory for a profession; hoping, perhaps, to work their way from the practice of a profession into political life. Thus the training of American statesmen has been even more general than that which the English have received.

But with the increasing complexity of the government of the United States, and with the appearance of new questions regarding taxes and tariff, it has become clear that those who are specially trained for public life are needed to conduct political affairs. The financial heresies which have taken people captive, the blunders in financial legislation of the last score of years, have arisen from an imperfect understanding of those principles concerning trade and money which educated statesmen accept. Many of the difficulties encountered in the government of either a State or a city are caused by the lack of men fitted to comprehend their nature and the methods of removing them. These facts furnish at least one reason of the prominence which colleges are giving to historical and legal studies,—studies that are specially designed to prepare those pursuing them for the public service. These facts also suggest the occasion for the establishment of schools of political science.

The first of the more important schools intended to fit young men

for political life, is that connected with Columbia College of New York city, which was opened in the autumn of 1880. The second is that of the University of Michigan, established a year later. In each school the course of study covers three years, and its completion is recognized by the granting of that most honorable degree of Doctor of Philosophy. The subjects taught in each school, though stated under different names, and considered from different points of view, are in many respects similar. It is interesting to note the questions concerning which the officers of Columbia College and Michigan University believe young men preparing for public life should be specially informed. In Columbia, these questions are the following:

FIRST YEAR.

Physical and Political Geography.
Ethnography.
History of the Literature of the Political Sciences.
History of Philosophy.
General, Political, and Constitutional History of Europe and of the United States.
Special Political and Constitutional History of England and of the United States.
Political Economy: Land Tenure, Taxation, and Finance.

SECOND YEAR.

History and Institutes of the Roman Law.
Comparative Jurisprudence of the existing codes derived from the Roman Law.
Comparative Constitutional Law of the principal European States and of the United States.
Comparative Constitutional Law of the several Commonwealths of the American Union.

THIRD YEAR.

History of Diplomacy.
Public International Law.
Private International Law.
Comparative Administrative Law of the principal States of Europe and of the United States.
Comparative Administrative Law of the several Commonwealths of the American Union.
Social Science and Statistics.

The course of study in the Michigan school covers a somewhat wider field than that pursued in the Columbia:

Theories of Political Economy.
General Political History of Europe from the Renaissance to the French Revolution.
Political and Social History of England from Henry VI. to Charles I.
Political History of America before the adoption of the Constitution of the United States.
The Laws of Public Health.
The Elements of Constitutional Law.
The Science of Forestry, and its relation to National Economy.
Political History of England from Charles I. to George III.
Practical Questions in Political Economy.
General Theories of International Law.
Theories of Taxation and Public Revenue.
History of Political Forms and Political Methods.
Constitutional History of the United States.

The Political History of England from George III. to the present time.
The Management of Reformatory and Penal Institutions.
Practical Questions in Social Science.
Political Ethics.
Political Theories and Methods of the English Government.
The Constitutional History of England.
Civil Service in Europe and in the United States.
The Government of Cities.
The History of Financial Theories and Financial Methods.
The History of Political Ideas.
The History of Modern Diplomacy.

That the thorough study of these topics well fits one for public station is clear. The mental qualifications needed by a modern statesman are, in the judgment of so keen and broad a thinker as President Eliot, "the power of clear, forcible, and persuasive exposition," and the "power of debate." Especially, he remarks, is the power of exposition needed "in a republic where millions of voters have to be instructed in matters of public policy, and gross ignorance is often to be found in men in intelligent representative bodies. The statesman seldom deals with new principles or ideas: his task is to show how to treat new cases by old rules; his business is wisely to apply well-established principles under more or less novel conditions." The statesman also needs the power of debate, "the power of fairly meeting the heavy shock of a worthy opponent's argument; of parrying the keen, quick thrust of an interpolated objection; of turning against an adversary his own guns; of summoning from the reserves of a well-stored mind prompt reënforcements of fact, figure, and illustration. The strong debater, in this sense, on large subjects, is a very rare personage, remarkable not only for the power of his word, but for the amplitude of his knowledge." *

These qualities of exposition and of debate, it is to be noted, are qualities that are disciplined by the thorough study of any subject, be it history, botany, or mathematics. But, considered broadly, it is only in the special school that they can be reënforced by those stores of knowledge which are essential to their greatest usefulness. That mental discipline and that range of learning which the statesman should possess are gained preëminently in the school of political science.

Yet it is to be confessed that the school of political science meets a difficulty of serious importance. The civil offices of the United States Government are evidently of two kinds: those that are desired

* Remarks at a public dinner given to Carl Schurz in Boston, March 23, 1881; reported in The Harvard Register, Vol. III., 257–58.

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chiefly for their pecuniary reward, and those that are sought by reason of the honor they confer. The former are mainly of a clerical nature; the latter include positions in Congress and in the Cabinet. The divisions between these two sorts of offices is not precise, but it is sufficiently exact for the present purpose. For the performance of the duties of offices of either kind, the school of political science furnishes an excellent theoretical preparation,—a preparation far more adequate than many now holding high official position have received. But the fact is, that appointments and elections to those offices desired by reason of the honor they confer, depend, in a large degree, not upon specific training, but upon considerations of a character entirely different. Who has been elected to Congress chiefly on the ground of his fitness to consider public questions? Who has been appointed Secretary of State by reason of his knowledge of the relations of the American Government to other powers, or of his being learned in international law? Reasons of a scholarly character, doubtless, in all cases have influence, and in some cases great influence, but they are not ordinarily the chief reasons. Men are chosen to the House of Representatives because of the success they have won in trade or at the bar; they are selected for positions in the Cabinet either because of their past services in politics, or to maintain the "balance of power" between opposing States and sections, or for other reasons equally trivial. The schools of political science, therefore, will fail to educate men for the most honorable positions in the government, simply because these positions are filled by election and appointment; and election and appointment are chiefly determined by other reasons than intellectual fitness. The graduates of those schools cannot hope to step from the commencement platform on to the floor of Congress as the English University man of fifty years ago went from Oxford or Cambridge to the House of Commons. Yet it is not to be doubted that so far as worthy men are selected for the highest offices, those who have paid special attention to political questions will come to fill those positions.

The schools of political science, therefore, will find their principal duty in fitting candidates for subordinate offices. When the principles of the Civil Service Reform are adopted, as they undoubtedly will be, these schools will prove to be the direct preparation for minor positions in all departments of the General Government. They will thus contribute to its efficiency and permanence. It is not to be questioned, further, that the training afforded by these schools fits young men for legislative and executive duties in the States, and for various public functions in the towns and cities in which they reside.

Of what great advantage, for instance, to any legislator or governor would a course of study at Columbia College or Michigan University, on the "Transportation Question," or on "Social and Industrial Reform," prove to be? Would not the officers of any city derive benefit by reading, under a competent teacher, on "water and air supply," or on the "disposal of decomposing matter"?

Not only, however, are special schemes intended to train young men for public life established, but also many colleges are, by enlarged courses of study, fitting their graduates for political life. They are disciplining the powers of "exposition" and of "debate," and reenforcing these powers by a wealth of learning. Political economy, a science of which most educated men thirty years since were completely ignorant, is taught in every well-equipped college and in many institutions, by most competent professors, to large and interested classes. The financial history of the United States is carefully considered in at least two of the principal colleges. General history is studied from the point of view of institutions and of law. In the remaining years of this century a larger proportion of college men may not enter political life. At the present time one-half of the members of the Senate and one-third of those of the House of Representatives have taken a degree. But it is certain that the next twenty years will be more free than the last twenty from errors in the making of laws, since the colleges are training their students in those questions which relate to the public welfare.

## NORMAL SCHOOLS—WHAT THEY HAVE DONE, ETC.

BY ANNIE TOLMAN SMITH.

NORMAL SCHOOLS have reformed teaching in our country; they have not reformed education. The negative view of their work has determined the recent drift of criticism against them, which their friends have too generally attempted to rebut in kind; and thus, between unwarrantable attack and sophistical defense, the positive merits of the normals have been undervalued or ignored. We begin by admitting the truth of the assertion,—normal schools have not reformed education, — and pass to the consideration of what they undoubtedly have done.

Whether the scheme of public education in our country be, or be not, a rational one, is still a debatable question; but that the methods by which it was prosecuted prior to the establishment of normals were utterly irrational, is one of the best authenticated facts in modern social history. It is true that certain persons endeavor to conceal the fact under a cloud, or a halo (whichever you please), of personal reminiscences to the contrary. We leave such special pleading to those who love their own opinions better than they do truth, and take our stand upon the grand averages which yield general and sound conclusions.

Prior to the date of normal schools, public schools were as good in Massachusetts as elsewhere, and better in Boston than in other parts of the old Commonwealth. As early as 1838 the Committee on Primary Schools had been authorized to select one primary to serve as a model, and every applicant for a primary teachership was required to be familiar with the methods adopted in the same. Notwithstanding this shining beacon, primary education continued to be a farce in the schools of Boston for many years,—amusing, yet carrying a tragic undertone.

The little, sentient, animated child, coming thither from his mother's arms, or the ruder freedom of the street, suffered a sudden, unnatural transformation. His intellectual life, expanding hitherto by means of the ever-changing touches upon his thrilling senses, had manifested itself in boundless, tireless activity. Now he became an appendage to a certain seat, his surroundings were fixed for more than half his waking-hours, his buoyant spirits were met by the supreme mandate, "Be still." It flashed upon him from his school-dame's eyes, it startled him in her ringing voice, it threatened him in her uplifted

rod. At a given signal he moved mechanically to his place in the class-row, his toes adjusted to a chalk-mark, his eyes fixed vacantly on a chart, his ears saluted with a strange jargon as his teacher called out, and he and his mates repeated in concert after her: "A, B, C; big A, little a; big B, little b"; and so on to "big and little zed."

The rite proceeding, the concert grew louder and shriller as Nature, restrained at all other points, vented her passion in a monstrous abuse of the vocal organs. A day came when the child knew all the individual symbols, and he was advanced to the permutations, and taught to conjure the muse through *a-b* and *b-a*, and, at last, it came to pass that he could read, but never as the crowning act of such a process. Somebody at home, some older child at school, some good angel in league with mother wit, had taught him words, and fitted them with meanings, and henceforth he caught ideas from the printed page, as erst, from the rapture of sense,—only now knowledge came in abstractions instead of concrete images, and his mental state was receptive instead of perceptive, and his mental action had lost a measure of force and spontaneity.

In the school the alphabetical conjurings alternated with numerical exercises whose memory moves me always to cry, "Blessed be counting." Computability is a general quality of objects which comes without the telling. The most stupid repetition of 1, 2, 3 could not cheat the child out of the consciousness that here was the expression of a familiar idea; and as oft as his lips sounded the series, you could see his small digits beating rythmic response. In vain the teacher rapped his knuckles and bade him cease the stupid habit, because Nature moved him by a mighty impulse to appropriate in the concrete what dogmatism forced upon him in the abstract.

Such was the *modus operandi* in city primaries, ere normal schools had quickened them. In the rural schools the case of juveniles was worse. "We were read and spelled twice a day," says Henry Ward Beecher, "unless something happened, which usually did happen." For the rest the little wretches were neglected, — matter indeed of small regret, if they had not been in constant danger from the inevitable consequences of such neglect. To fancy, as some would have us, an advantage in the indiscriminate mixture of ages in the old district schools, from the opportunity thus afforded younger scholars to hear the exercises of the elder, is as absurd as to imagine Jack, the Giant-Killer, in the satisfaction of a full stomach after witnessing the gormandizing of the giant.

In the grammar schools of this early date was accomplished the full expansion of the scholastic ritualism. A set of text-books signal-

ized the child's admission at the mature age of seven or eight years and from that moment to the day of final promotion into the master's room, — a period of from four to six years, — his mind was dragged along through a ceaseless round of question and answer according to the printed letter. If it be true that "acts of intelligence have their point of departure in sensation," then the only acts of intelligence under this regimen must have resulted from getting ahead or getting a whipping. In my passage through one of the most notable of these "grammars," I never witnessed the slightest deviation from the routine, nor heard any word of elucidation, nor amplification, nor suggestion of a relation between the sayings of the book, which we repeated with Chinese accuracy, and anything in the "heavens above, or in the earth beneath, or in the waters under the earth." In the master's room, at last, ideas were presented, and by other means than verbal reiteration; but words had too long absorbed our childish energies; objects irritated and forces in action distracted us, and we proved that the second nature of habit is harder to overcome than that primal nature by virtue of which we are "the sons and daughters of light."

I hold with those who do not regard manners and morals as direct objects of school effort, but doubtless the intellect may be manipulated by processes fatal to both; and I believe that schools conducted as I have described are nurseries of bad passions and false principles, against which the combined influence of home, of Sabbath-school, and,—I had almost included,—grace itself, has doubtful advantage. If we turn to the school-history of cities which, like Boston or New York, have afforded model and precedent to the country at large, we shall observe that the characteristic of the decade (1830 to 1840) was the creation of primaries as a distinct class, and the grading of grammar schools. The methods and *personnel* which went to the service of public education were thus brought into an order available for critical examination. As the result, specific conditions were discovered sufficient to account for the failure of the schools in general to satisfy the public want.

The traditional methods of instruction were seen to be worthless when applied to children *en masse*. Women teachers, it was found, were assuming an important relation to the public welfare, but they had not adequate opportunities for preparation, nor the professional recognition essential to success.

Evidently the time for Normal or Teachers' Training Schools was fully come, and in 1839 the first of these institutions was opened at Lexington, Mass. The relation of events here indicated is confirmed

by the provisions of the acts under which the earlier normal schools were established. The curriculum included the subjects taught in the common schools, certain advanced branches generally specified, and the theory and art of teaching. Women were always admitted, and a few of the schools were confined to that sex.

In this boasted scientific era it certainly behooves us to use the "scientific method" in examining our public institutions. Normal schools should be judged by their discharge of the functions assigned them. Have they sent into our common schools teachers thoroughly instructed in the elementary branches? Have they removed the stamp of ignorance from our female teachers? Above all, are their graduates skilled in the use of rational methods of discipline and instruction? The affirmative evidence is embarrassing in its abundance, whether we consider the men who have borne the testimony and who cannot be suspected of personal motives, — as President Porter and President Gilman, and the revered Barnas Sears; or the results of investigations ordered by State legislative bodies, as in New York and Maryland; or the endeavor made throughout the South, and by men naturally jealous of Northern innovations, to secure similar institutions by civil action appropriation; or the facts, more impressive still, which lie open to the observation of all who will wend their steps into a primary, a third or fourth grade, or a modernized district school.

What changes are witnessed! The word-method has supplanted *a-b ab;* in arithmetic, the concrete has taken the place of the abstract; observation is excited by forms and colors, and their repro duction in weaving, modeling, and drawing; nature is brought within the school-room in plant-forms, in cabinets of stones and shells and stuffed birds; the child's sympathy with nature is recognized and utilized in oral lessons glowing with the teacher's own thought; textbooks increase the charm by their easy style and pictorial illustrations; the succession of mental exercises is broken by songs and movements; the atmosphere of love and light prevails where once was antipathy and gloom, seeing which and remembering weary primer-days of old, you think if Heaven be Heaven, but by comparison, then, here it is.

Improvement in discipline has, of course, kept pace with improvement in instruction; the rod is not abolished, but the teacher of elementary grades feels almost as much disgraced in resorting to it as the most sensitive scholar once did in its infliction. Am I speaking of exceptional schools? Exceptional only in this, that they are in charge of teachers who have had the training of normal schools;

*i. e.*, the only ones that should be taken in this evidence. Exceptional schools, unfortunately, there are; for less than four per cent. of new teachers annually required in our public schools are normal graduates; and, although normal institutes and summer normals extend the influence of the better training far beyond the direct range of the normal proper, the great proportion of our schools are still in the gripe of empiricism and the bonds of tradition.

Normal schools have borne little fruit in morals. The reasons are obvious. Until lately two notions of moral development have prevailed. On the one hand, it has been regarded as the gift of grace, and an endeavor to produce it by natural processes would have seemed like an interference with the covenant prerogative; on the other, it has been viewed as a corollary of intellectual development, a fig on a thorn-bush. Neither of these ideas originated in the normals, which really have had something to do with exploding them. Thus, in the consideration of the problem, What is teaching, and how should it be done? attention was first directed, in the normals, to the modes of presenting subjects; gradually the mind to be affected rose into view as the most important factor in the solution, and out of this examination was evolved a clear conception of the essential distinction between intellectual acumen and moral sensibility. The idea, removed from the region of metaphysical speculation and religious enthusiasm, was formulated into a cardinal doctrine for educators, and in combination with the marvelous expansion and universal need of scientific knowledge, it has raised the question, more profound, more comprehensive than that originally addressed to normal schools, What is Education, and how shall it be accomplished?

Institutions are, of necessity, conservative. They embody forces which by persistent, and possibly desperate, effort man has reduced to orderly service; they represent triumph and repose; if they are to become the media of new ideas and new forces, it must be at the public instance. Such, apparently, is the issue which the normal schools have encountered. Everywhere the public voice is crying out, "Fit our children to live." The sound thundered first around the colleges; gradually they fell into line with the new requirements; still the agitation was not allayed, and at last it appears that a change is demanded in the ground-plan of our system in the common schools. Will the normal schools make the adjustments?

We have developed a surprising avidity for educational facts, but, curiously enough, it is for the facts which it concerns us least to know,—"unorganizable facts," from which no vital principles are deduced. While we are balancing our totals of scholars and teachers,

of material and funds, against those of foreign countries, we scarcely note the degrees by which they are surpassing us in the adaptation of elementary schools to the conditions of practical life.

"As is the teacher, so is the school," is our saying; the German assents, and makes a better school by making a better teacher. France watches the process and profits by the observation, as will be seen in a comparison of the programme for French Normals, issued in 1881, with the corresponding programme for teachers' seminaries in Prussia, of date 1872. We do well to study these programmes; they represent a different conception of the teacher's preparation from that which is embodied in our training; they carry a different promise for elementary schools. They suggest an ideal of scholarship; but, better still, they define the means by which young people may be prepared for the industries which make life comfortable, for the civil obligations which make society secure, and for the normal convictions which give dignity to virtue, In comparison, our training seems too hasty, superficial, and partial. We have relieved teaching of its dullness, but, evidently, we have not developed its full power over habit and character. Is not here the grand opportunity of our normals?

I have raised a comparison as a means of indicating the direction in which the efforts of normal schools ought now to be concentrated. Let me not be understood as implying thereby any disparagement of what we have accomplished in the education of the masses.

The Prussians excel us in elaborating and formulating principles, but we need fear no comparison with them in the matter of average intelligence. With France in the lists, however, we must look well to the roots whence our laurels spring. Given Prussian philosophy with the liberty, the originality, and the zeal of the American teacher, with a school-machinery fitted as ours is for the rapid diffusion of ideas and for the equalizing of school conditions in city and country, and you have a forceful combination of the practical and ideal. Is not this the combination which the French bring to the cause of public education?

## PHYSICAL TRAINING AND GYMNASTICS IN GERMANY.

BY C. KOHLRAUSCH.
[Translated by Marion Talbot.]

A PAPER on the educational value of school-games was recently presented by Mr. Koch of Brunswick, Germany, to a philological association at Halberstadt. After dwelling on the influence which games have in the development of character, and giving an account of the system in vogue in Brunswick, Mr. Koch urged the necessity of introducing into the higher grades of schools games which should be adapted to older pupils, such as English cricket and football. After a long debate the association agreed to the necessity of introducing games out of school-hours, and of gradually making them obligatory. In Berlin, Frankfort, and Darmstadt steps have been taken toward carrying on games for the public school children under the direction of instructors.

Mr. Koch speaks only of school-games, but he cannot mean to make a distinction between these and gymnastic games. Though he says in the report that the gymnastic teacher looks with an evil eye upon the introduction of games, this statement certainly rests upon a misunderstanding. A glance into any work on gymnastics would correct this error. Jahn devotes a whole section of his Gymnastics to games. He considers them an essential part of instruction in gymnastics, and says they are closely allied with gymnastic exercises, and with them form an endless chain. Without gymnastic games the art of gymnastics will not succeed. No gymnastic institution should be without a playground as well as a gymnasium. In all genuine gymnastics a world is aroused. Here work and play, seriousness and mirth, are associated. Here little children learn to uphold equity and law; here they learn custom, habits, propriety, tact. To learn to live with equals is the beginning of human greatness. Seclusion tends to egotism.

Gutsmutz, in the preface to his work on "Games for the Exercise and Recreation of Body and Mind," writes on the meaning of games, their moral, political, and pedagogical value, and their choice, classification, and peculiarities. He divides active games, which alone he considers, into first games, which cultivate observation and thoughtful judgment, and second games, which excite the dramatic sense. We would mention, further, Klosz on "Gymnastics and Sports," Wagner's "Boys' Book of Games," and Schaller on "Sports and Games."

We call to mind that a demand for games has been manifest in the pedagogics of all ages, especially among the Greeks and Romans. It is said of the convent schools, that "no matter how severe and rigid the rules were, pleasure and recreation were never entirely overlooked." There were stated holidays, during the year, when sports were carried on until late in the evening by the aid of lamplight. In their games some ran to a goal for a prize, others wrestled in pairs after their hands had been oiled, others engaged in pole-jumping, and others threw stones at each other, being protected by coats-of-mail.

Comenius likewise urges the importance of games. Jean Paul makes a distinction between schools for games and schools for learning: "in truth, if one of them must be given up, the former should be kept." He calls play the poetry of mankind, and says, "play develops all the powers without requiring any one person to gain the mastery. Where, except among his equals, can a child show and develop power, resistance, forgiveness, generosity, kindness, — in short, all the attributes of fellowship?" Schleiermacher asserts that children learn from games to use and govern all their powers; that they in that way acquire the greatest good, and are in the least danger of becoming immoderately fond of pleasures, or lazy and idle, or even immoral. Kleinschmidt, in his essay on the "Spiritual Development of Youth," desires that opportunity should be given for the free movement of the body, and for practice in self-control, decision, and courage.

Since the need of games for the young has been so often felt and expressed, it seems strange that they should nevertheless go out of use. We will proceed, first, to give the reasons therefor in order, after a thorough understanding of the evil, to find a remedy.

Some years ago, when there was a universal complaint concerning the slackness of schools, institutions of learning were subject to the reproach that, because of the tendency of the age, they allowed intellectual education with a view to money-making to become so prominent that the physical development of the young was interfered with and even endangered. The charge was brought against the schools, that they allowed no time for mental recreation and invigoration, forgot the fundamental principle of all education,—*mens sana in corpore sano*,—and thereby lost sight of their aim, the harmonious development of the whole individual. These and other charges gave rise to long and serious observations, conferences, and experiments in the educational world. Although the school-duties demanded the full strength of the pupils, the complaints which had been started were justified only partially here and there. Restriction and more

precise limitation of the tasks were actually made where they were needed, and the scholars were consequently somewhat relieved. Larger play-rooms and time for physical development were granted, and the complaints of over-crowding were quieted.

Greater freshness and animation, renewed strength, and lively interest in intellectual work had been looked for as the result of this change. Experience shows that when the lessons are shortened the mental activity is either not increased at all, or not in the expected ratio. On second thought this result does not seem strange, for the matter is not helped by granting time alone. The schools should not rest satisfied with this, for physical education has always been an integral part of their task.

In school, physical education is given principally through gymnastics; accordingly the demand is reasonable that such instruction should give proper heed to bodily welfare. It should be required to give to the nerves and organs of sense and understanding, after mental exertion, nourishment sufficient to invigorate them. The means to be employed are physical exercise, free exercise of the blood, and healthy sleep. When no improvement is attained in spite of all the care devoted to mental training, it is natural to reproach gymnastics, the instrument of physical education, with not efficiently accomplishing its task, so that a lack of mental elasticity arises. This reproach is quite one-sided, since, without going to the root of the evil, it makes the method of Spiesz responsible for the deficiency. This method of gymnastics is universally condemned for having banished active, cheerful exercise, vivacity, and especially children's games. Schaller says, "no scholar need be ashamed to confess that gymnastics, as usually conducted, is wearisome," This charge is taken to be an established fact, in the report mentioned. Before admitting it, let us inquire what has been done for gymnastics in schools in order to recall some enactments which are still observed in many places. We may be excused for beginning with Prussia.

It cannot be denied that a great deal of attention has been devoted to instruction in gymnastics during the last twenty years in Prussia, so that it is now included in educational schemes like other objects of instruction. A ministerial enactment of Sept. 10, 1860, designates it as an integral part of school-work. A decree of April 7, 1866, requires instruction in gymnastics to be given in classes; another of April 14, 1866, requires that in case the instruction is not given by a regular teacher, the special instructor shall be one of the board of teachers, and shall take part in their conferences. On January 10, 1867, it was decreed that school directors should not in the future ex

cuse the graduating class from gymnastics, and should regularly express their opinion of the work accomplished by the class, not only in the reports of the term examinations, but on the diplomas. If these enactments are not complied with everywhere at present, it is a sure sign that directors and other officials are not convinced of the importance of this disciplinary instruction.

This is not the place to compare the merits of the systems of Spiesz and of Jahn. Honor to Jahn! But Spiesz can speak of the evils of that system, the indifference shown in the attendance, the lack of regular instruction, etc. In this connection we will refer to what Spiesz himself says: "It is important that regular and definite exercise should also make the scholars happy and merry. Play should be exchanged for social exercises, and exercises for games, in which the regulations should be strictly obeyed. Time, dance, and song are closely united in the exercises. Different games, bathing, swimming, and skating are taught." Spiesz requires instruction to be given in the lowest classes, and recommends the introduction of gymnastics into the advanced classes of high schools and academies. The exercises should be graded and extended according to the classes Exercises in marching and carrying the body will prepare the scholars for military service. Waszmannsdorf says, concerning the variety of exercises contrived by Spiesz, "there are no new ones." In such a system can there be a lack of change, gayety, variation or mental and physical activity? If a pupil were indifferent to such gymnastics, would not every one look on him with scorn, notwithstanding Schaller's remark? If any fault is to be found with gymnastics, it is that the recommendations of Spiesz are but half followed.

We think the charges against the method of Spiesz are sufficiently answered. Where they are just, where a so-called follower of Spiesz does not succeed in carrying on a class of forty pupils in general gymnastics, as was formerly done, then by all means we should go back to the good old ways. They indeed are still too much in vogue for any complaints to be heard of the ravages of time. Gymnastics is no more responsible for the apathy of the young than is overcrowding. The cause lies rather in the present tendency to refinement and luxury and in wrong domestic training. Only when healthfulness,—the third factor which is necessary,—is secured in both, will the desired results be obtained from greater attention to gymnastic instruction.

The milliards of 1870–71 opened the way for materialism and egoism. Money-making is now the watchword of every school-boy, even before he has learned to do any work for which he can expect re-

muneration. It is the desire of every one to make money, but only in order to secure all the enjoyments of life. Every means is used to attain this end. So-called worldly wisdom, carried to cunning, wantonness, and deceit, is one of the chief means, and, moreover, frequently appears under the mantle of propriety. On the contrary, honorable work is held in disrepute. "Work is for the stupid" are some of those winged words which the crude cynics of to-day utter. Nobody is worthy of envy except the one who can procure costly pleasures. So much is commonly sacrificed to a show of wealth, which is reputed to be necessary, that the most sacred duties are neglected in consequence. People live "in great style," as they like to say. The training of children is left to ignorant and immoral servants, and in this way the prosperity of the family is injured.

When a wrong example is set before children at home, there results a bad influence upon the schools. There is not only no time for judicious care and training, but the injurious customs of the age force children into a whirlpool of pleasures and enjoyments. There are parties and balls and dances. Much more harm is done by the sweetmeats, highly-seasoned viands, and spirituous liquors, which are considered necessary on such occasions, than appears at first sight. The nervous system and all the organs of the body become paralyzed and benumbed. Children, especially in the higher schools, are frequently injured by too much as well as too good food. Professor Bock says, "Too much good food is as detrimental as too little." The result is that the changes taking place in the organism have to be assisted by means of wines, spices, or even medicines. This is the more unfortunate, as the process of renovation is constantly going on in the organs during youth. But, moreover, it is evident that these customs excite the imagination of children disproportionately, and consequently occasion mischief and harm. If a child happens to remain innocent and natural, it is injured by what it sees on the street, by attendance on the theatre, or by harmful reading. The present mode of dress is merely the result of style and fashion. Think of the patent-leather shoes and the high heels, which are alone enough to prevent vigorous movement! Boys, as well as girls, are unable to tread firmly without injuring their shoes or turning their ankles. It is no longer considered proper for them to run. They appear like mere dolls on the street and at the dancing-lessons, or else carry themselves like old people. They know and understand everything, consequently they have every liberty, and do not consider it necessary to work. Elegant little gentlemen, who can only be touched with kid-gloves, are made out of boys originally strong and hearty. It is

not strange that when they are accustomed to such pretentious effeminacy they can show no energy, and only half understand how to work. Here is the ground of all complaints; here, too, must the lever of reform be applied.

So long as no change takes place in this method of training the young, a diminution of work will have as little influence as the introduction of games in securing the desired mental vigor and alacrity for work. Even the least labor will continue to be hard and the best game tiresome. Accordingly all compulsory means should tend to make the entire mode of living natural. The directors of health and morals, the homes and the schools must do their part. Fathers and mothers must devote themselves more to their families, and to the fulfilment of their obligations to their children. An end must be put to pleasure-visits, parties, and the like, and, instead, children must be taught useful occupatious, and learn how to work earnestly. Their reading especially should be directed. They should be kept away from theatres, and everything else which would make them old before their time. They should not be allowed to hear the mischievous talk of servants. An example in frugality and industry should be set by parents to children, by masters to servants, by superiors to inferiors, and by teachers to scholars. Children should be taught obedience, respect, and genuine religiousness. Let no one object that the schools cannot and should not be troubled with such things, and plead that there are no ways and means to influence training out of school to such an extent. The school has more power in this respect than appears at the first glance,—the higher schools especially.

Goethe says, "Of all human activities there is no factor which has so great and abiding an influence in the realm of education as the family, when it is properly brought in play." In domestic training the greatest attention must be paid to the diet of the child. Professor Bock says, "he only can be intelligent whose organs of intelligence are sound," If a well-regulated and highly-developed spiritual activity is desired, the brain with the nerves and organs of sense must, above all things, be in the soundest condition. This implies the absolute necessity of nourishing these organs naturally. For this purpose a proper amount of good blood, in free, undisturbed circulation, is necessary. This is to be acquired and retained, in the first place, by means of rational nourishment. In most cases it will suffice to call the parents' attention to its influence upon the mental life; the family doctor may do the rest. A little instruction on this point might also be possible through the public press, societies, etc.

The scholars in the upper classes should be thoroughly instructed in the most important rules of dietetics. Not until then will they understand and heed admonitions in regard to temperance and modesty. Our youths are not quite so bad, but that some of them, indeed most of them, feel the influence of increased knowledge. Instruction in regard to clothes and their adaptability may be left to the teacher of gymnastics. He has frequent opportunity to call the pupils' attention to the unsightly appearance of his clothes, as well as their interference with his motions. If the teacher is persevering enough, and pleasant and earnest in giving counsel, he will certainly be successful. The pupil himself will express his wishes to his parents, and the tight, stilt-like boots, scant trousers, window-glass lorgnette, lead-pencil cane, and the like, will disappear. Pleasure will be found once more in walking, running, jumping, and working.

Now let the schools do their part. First, they should not receive very young puplls. Professor Bock says, that if the brain is forced to do mental work before it is well developed and strengthened, — that is, before the seventh or eighth year, — it is rendered less active during after-life, and a tendency to convulsions is frequently produced. But when the scholar once enters school, he should learn to work. He should understand that learning is work, and that he is, in school as well as in the world, to work. Proper exercise for the intellectual organs comes next to diet. When children are healthy, and have learned to work and to keep themselves occupied, it will not be necessary for the school to keep them constantly at their tasks. There will be both time and opportunity for physical and mental recreation. There should be longer pauses between the lessons than formerly, giving a chance for physical exercise. It does not make a pleasant impression upon one who is fond of children to see a troop of them remaining quiet and stupid between the lessons, or shambling about as if they had lost all their vitality, instead of running about freely and happily. On the other hand, it is painful to see children rushing out like wild beasts, shouting, screaming, and coming to blows. The golden mean is right here, as everywhere else. Children should enjoy themselves to the full. After sitting still, they want to run, jump, sing, shout, and even tease each other; and they should not be prevented. Even a blow, if not given angrily or maliciously, hurts nobody.

Active games are of most value when undertaken by classes. We mean the lower classes, for the upper classes may take their exercise properly, but according to their inclination. In order to lose no time, the game should be decided upon before the class goes out, and

the choice made known by writing on the board. The apparatus for games must be produced without loss of time, and the boundaries of the playground must be fixed. It is of course taken for granted that the scholars understand the games. The tutors should be so familiar with the rules of the games that they can act as umpires if necessary. The hours for exercise should come between the other lessons. There is no need of proving that, after sitting for several hours, it is beneficial to the body, and especially to the brain and nervous system, to stretch the limbs and take active exercise, and thus set the blood into free circulation.

The younger classes must have all their afternoons free, and the middle classes as far as possible. More is required of the older pupils, yet their afternoons should not all be occupied. It is better to begin an hour earlier in the day. If the system of Spiesz be introduced, his directions should be followed. If the instruction in gymnastics is given in classes, as Spiesz desired, the exercises should be divided and graded as he directed. But the time is not given to the exercises which he considered necessary to secure the desired result. He requires a child to practise an hour daily throughout the year, or at least four hours a week. We are satisfied with two; and sometimes in winter the exercises are wholly abandoned. Accordingly the most zealous and skillful instructor cannot attain the success anticipated by Spiesz. If the attempt is made to overcome this deficiency by unusual and severe pressure during the hours for exercise, it is not strange that the scholars lose their interest and enjoyment in gymnastics. There has been a prejudice against games because of the erroneous idea that Spiesz considered a playground superfluous or unnecessary with a gymnasium. The opposite is true. The gymnasium, however necessary it may be, is still only a make-shift for cold and wet weather; at all events, no school should be without a large playground, and where there is such a place for general exercise near the school, it is inexcusable not to use it for classes in gymnastics. Gymnastic exercises, as well as games, may be enlivened by songs. Those given out by the singing-teacher need to be practised; accordingly the instructors in gymnastics and singing should consult together. Popular and patriotic songs, especially the latter, are suited to gymnastic exercises.

Excuses from gymnastics should not be granted as much as is customary. We recall a ministerial decree of January 10, 1867, in which the directors were instructed "to insist with the greatest possible severity on the participation of the scholars in the gymnastic exercises, and to grant excuses only in cases where certificates from care-

ful and conscientious physicians state that the exercise would be decidedly harmful. If such certificates are misused, the intervention of the royal district physician will be of service." On this account, especially, we wish that schools could require a certificate from a district physician, for frequently nothing is easier than to get a certificate from the family doctor, which results in an excuse from gymnastics. Perhaps the whole trouble arises from a feeling of variance between the scholars and the instructor, or from the slackness and idleness of the pupils. The certificate should state the complaint exactly, and mention in detail the kinds of exercise which should be expressly avoided. The question of excusing the pupils should then be left to the master for decision. Scholars who are weak, or only temporarily prevented from taking exercise, should not be excused altogether, but should be required to be present at the exercise.

The diploma for gymnastics acquires a higher value from the fact that, in order to secure a certificate granting the right to take military service for one year only, the applicant must prove that he has taken a regular course in physical training, of which the certificate must give a complete report. Those who possess these diplomas are favored in being obliged to devote only one year of their life to the State, whereas others must sacrifice three years of their strength to military service. This is only right when the one who enters the army for a one year's term has already had physical training.

In the hot season a course in bathing and swimming should be instituted in every school; for, besides making a good stock of blood, it must be kept pure, which, after sound breathing and suitable exercise, is best done by constant care of the skin. Hufeland says, "the skin is the greatest medium for purifying our bodies. It is likewise a grand means for preserving an equilibrium in the powers and motion of our bodies. The more active and open the skin is, the more secure will people be against obstructions and diseases of the lungs, intestines, and lower stomach, and the less tendency will they have to gastric fevers, gout, asthma, catarrh, etc. One great cause of these disorders being at present so common amongst us is, that we no longer endeavor to strengthen and cleanse the skin by bathing and other means." Mr. Klosz writes, in the year 1861, that of 120,000 inhabitants in Dresden, hardly two thousand could be counted who bathed, in spite of the splendid river Elbe. This is true to-day of Dresden, and other places are still worse. There is a pressing need of reform. The muscles of the arms, feet, and chest are well exercised in swimming, and this exercise is of special importance for growing children, and those who are engaged in sedentary pursuits, on account of its tendency to broaden the chest.

In winter, schools should give time and encouragement to skating. The teacher of gymnastics, to whose department it belongs, would thereby gain the love and gratitude of his scholars, and the exercise in the fresh, pure air would be a great blessing to them. Mr. Klosz says of skating, that it is an exercise as useful as it is popular; not only promoting muscular strength, but agility, courage, and an agreeable bearing.

Suitable excursions or rambles may be made at all times. The temperate seasons are especially adapted to sports. Everybody has seen children, on sunny days in spring, running and jumping with genuine delight. In the autumn they do not wait to be urged, but go out in troops to fly kites and engage in other sports. If children have time and a good playground, and still do not play, it is for the interest of the school to appoiut regular hours for exercise, and give instruction in suitable games. Healthy children will not then stand upon ceremony. It is sufficient to lay down universal rules in relation to play-hours. Of course, in warm weather the late afternoon hours should be chosen for out-of-door games, and in cold weather the earlier hours. The choice and division of the different games should be left to the instructor.

We must not pass by the fact that these requirements unite to make a heavy task for the teacher, but it is also a most grateful one. What hearty intercourse there must be between scholars and the teacher, who is with them everywhere, oversees their games, and takes part in their pleasures and occupations! Above all things, the teacher must not act the part of a police-officer, nor be a bungler in the games, but must join in them and be more skillful than the children if possible. There is no fear that authority, the nimbus of a teacher, will disappear; on the contrary, according to our experience, scholars feel honored when their teacher associates with them, and manifest affection and good-will for him.

Before closing we must reply to two objections which are held by most people who do not concern themselves much about gymnastics. In the first place, they take it for granted that children acquire rude, rough manners through physical development. The reverse is true. The instructor in gymnastics who is well-trained does not have recourse to wrestling and fighting, because he has other means for exercising the physical powers of his pupils. Development of strength, self-control, sense of order, discipline, courage, are the great aims of gymnastics whereby it strives to increase the power of self-defense. It seeks to promote valor, unity, and genuine morality by means of bodily exercise. The opinion is equally false that gymnastics makes

children foolhardy and rash. The one who is not trained in gymnastics is in danger of expecting what is impossible from his strength, because he has no sure measure of it. Then, again, he may be overcome by fear when a practised and careful gymnast of similar strength could exercise self-control, and perhaps escape from a threatened danger.

Let no one be astonished, that before promising the best results from the introduction of gymnastics, we make so many stipulations and require in particular that the family and all the surroundings of children should be of a helpful character. We would be glad to assert that the best results follow from gymnastics, were we not afraid that, in case of failure, complaint would be made against this department of instruction alone. The school should leave no means untried, the State should shrink from no sacrifice, — the reward, the welfare of our youth and their future, is worth the trouble.

## *THE UNCONSCIOUS IN EDUCATION.*

BY JOHN EDWARD MAUDE.

THE German schools of modern philosophy have worked out some wonderful results, but perhaps the most wonderful and the most useful result of them all, especially to the science and the art of education, is the philosophy of the unconscious. It has been shown beyond the possibility of doubt that the human mind does far more work unconsciously than consciously, and that discovery ought to furnish great lessons for the use of educators. Emerson complains, "In a hundred years, millions of men, and not a hundred lines of poetry, not a theory of philosophy that offers a solution of the great problems, not an art of education that fulfills the conditions."

But the philosophy of the unconscious ought to have furnished some lessons that might lead to the true art of education. The substantial truth of that philosophy, so far as it applies to the analysis of mind, has not been doubted. All psychologists agree, and must agree, that the human mind does most of its work unconsciously. It is admitted that, not only in reflex action, but in the highest thinking of men, the mind acts in very large part unconsciously. Why has not this truth been the mother of a new art of education, or at least of some new method of education? If the mind does much more work unconsciously than consciously, our educators should surely use that fact in their work.

Every one knows that the mind is conscious of only one idea at a time: the idea that at each present moment is before consciousness. Not only does the mind learn much unconsciously, but even what it has taken great pains to learn consciously lies in the mind, but not in or before consciousness. Mind is the whole, of which consciousness is a part; the mind is a vast hall, which contains myriads of ideas, and consciousness is a small mirror in that hall before which those ideas may be made to pass, one at a time. Our knowledge is mainly potential, not actual; we can be conscious of a certain idea if we will to be, but actually are not conscious of it unless some occurrence excites the nervous tract which is its physical correlate. I am unconscious of every idea that I know except the one which I am now writing down; even the process by which my thoughts are, one after the other, translated into marks upon the paper is an unconscious one, though that process was once, perhaps, a painfully conscious one. The brain process which moves my finger, or any other part

of my body, is an entirely unconscious process. I literally do not know how to move my finger, and yet I can and do always move it as I will. This is true of every act of the body that I consciously perform. I consciously will the act, but do it I know not how; I am conscious of the end I have in view, but unconscious of the means of reaching it. Besides these acts in which we are conscious of the end, there are human actions in which we are conscious of neither the means nor the end, as reflex actions, the actions of the heart, viscera, and all the vital organs. Some physiologists try to prove that these, too, are actions of which the race, or its ancestors, were originally conscious, but which have become unconscious by habit through constant repetition. Moreover, as all these actions are actions for a definite purpose, and are performed intelligently, with perfect adaptation of means to end for the accomplishment of that purpose, there is an intelligence ruling them, and an idea, of which we are unconscious, of the end and the means. All action for a purpose involves the presence of an unconscious idea, and there must be present in all unconscious action for a purpose an unconscious idea as its guide. Purpose is the mental element of action; wherever purpose appears, there must be mind.

But my purpose is not to prove or discuss the philosophy of the unconscious. I aim only to apply that philosophy to the business of education; and for a full discussion of its principles, with abundant illustration and proof of them, refer the inquirer especially to the works of Hartmann, the German author of the "Philosophy of the Unconscious." We shall now take much of the philosophy of the unconscious for granted, and discuss it only so far as will be necessary to illustrate our meaning. Our object is to discover, if possible, what the proper work of the educator is, — to learn if he is doing it properly, and to discover the true application of the knowledge that we now have of the unconscious powers of mind to the art of education.

The work of the teacher can be divided into two parts: instruction and education. Instruction is the conveyance of ideas into the mind from without, which the mind has no means of acquiring without such instruction; while education is the "leading out" of ideas which are already unconsciously held by the mind, into the presence of consciousness. Instruction draws its materials from without, education from within, the mind. Instruction brings ideas which may or may not be true, and which might have been different; education brings before the consciousness ideas which must, from the nature of mind itself, be true, as well as ideas which instruction furnishes. Instruc-

tion does its duty when it conveys ideas into the mind, whether or not those ideas ever find, and penetrate into, the small inner sanctuary, the holy of holies, called consciousness; education, from the very nature of its task, has to bring ideas from the outer courts of the mind into the aditum of consciousness. Thus it appears that instruction has but to implant ideas in the mind, while education has to take those ideas after they have been implanted in the mind by instruction, and all other ideas, including those called "innate ideas," and present them to consciousness. Instruction has to bring into the mind empirically a vast mass of ideas from without; education has to bring both the empirical and the *a priori* ideas before consciousness from within the mind itself. The work of instruction is great in quantity, extensive; the work of education is fine in quality, intensive. Instruction carries in as large a quantity of facts as possible; education arranges those facts, chooses the essential ones, finds their laws and relations to each other.

We do not need to bother ourselves here about the discussion concerning innate or *a priori* ideas. Education has to present to consciousness both *a posteriori* or empirical, and *a priori* or innate, ideas; in either case education develops powers or knowledge already possessed by mind, no matter how those powers or that knowledge were acquired. The business of education is with consciousness, and its duty is to discipline the individual by presenting ideas to his consciousness that he may see them, their laws, and their relations. Whether there is a difference in kind, or only in degree, between the ideas that the mind possesses does not here concern us. We only care to say that there are some ideas,—such as that two and two make four, that two straight lines do not inclose space, that virtue is better than vice,—which we seem to remember rather than learn, and which men therefore call "innate ideas." Between such ideas as these and empirical ideas,—such as that Canton is in China, that the French Revolution occurred in 1789, or that Jesus Christ was born 1886 years ago,—there seems to be such a vast difference that, even if it really were but a difference of degree, it is only conceivable by us as a difference in kind. Education only develops, or makes us conconscious of ideas that we already have in our minds, whether those ideas be innate, or were acquired empirically; while we cannot conceive of instruction teaching us the so-called *a priori* truths of mathematics, or ethics, or physics. Instruction furnishes material; education seems rather to furnish form. Instruction may, or may not, bring ideas before consciousness, though its proper work is finished when it has conveyed ideas into the mind, whether the mind

be conscious of them or not; education must present ideas to consciousness.

After education has presented ideas to consciousness, those ideas fall back into unconsciousness. Consciousness sees but one idea at a time, and is conscious of that idea only for the present moment. All other ideas but the one present to consciousness are held by the unconscious powers of mind. The process of the education of the human mind seems, therefore, to be: First, the acquisition by the mind of a quantity of ideas, which it holds unconsciously in waiting for consciousness to choose from the mass the particular ideas that it has interest in; the greater the mass of ideas, therefore, held in unconsciousness, the greater will be the quantity of material that consciousness has to choose from and work with. Secondly, presentation to consciousness, by the process of education, of ideas out of the mass held in the mind unconsciously. Thirdly, relapse of those ideas into unconsciousness, to be again held in waiting for the call of consciousness.

It appears from this that education, in the broad or generic sense of the term, includes instruction, for the first of these three steps is what we call instruction. Instruction which persists in carrying its load of ideas not only into the mind, but into the presence of consciousness, is possible, but exceeds its proper office. The proper process is, as we have described it, a process of three steps, of which the first one, instruction, leads no farther than to the unconscious courts of mind, leaving to education the presentation of those ideas to consciousness. New ideas, or ideas which the mind has never before acquired, should not usually be brought from without directly into consciousness; they should usually be allowed to grow old in the mind, to be digested and assimilated with other ideas in the mind until consciousness gets an interest in them, and calls them before it. This is the natural process of education, though, as we shall see, our present system does not use it.

It also appears from our analysis of the process of education, that education has to present to consciousness either ideas that have never before been before consciousness,—that is, ideas that have been acquired by the first step, by instruction; and ideas that have already been before consciousness and have fallen into unconsciousness again by the third step,—that is, it has to present remembered ideas to consciousness. Instruction has nothing to do with remembered ideas.

This process of education consists, therefore, of drawing ideas into the presence of consciousness, and then allowing those ideas to fall back into unconsciousness again. There are, therefore, two kinds

of ideas held by the mind unconsciously: the ideas acquired by instruction, but which have never been before consciousness; and the ideas which have been before consciousness, but have fallen back into unconsciousness. Precisely what the difference is between the two kinds cannot be stated in few words. We are said to have learned the latter kind, and are commonly believed not to have learned the former kind. We can recall or remember the latter kind, and we therefore count it as part of our knowledge; while many of the first of the two kinds of ideas may never be brought before our consciousness. We may here conceive of four kinds of ideas in relation to our minds:

1. Ideas which have never been brought into our minds in any way.
2. Ideas which have been brought into our minds, but have never come to consciousness.
3. Ideas which are before consciousness.
4. Ideas which have been before consciousness, but have relapsed into unconsciousness.

This fourth class might be divided into two sub-classes:

*a*. Ideas which can be recalled to consciousness.

*b*. Ideas which cannot, under ordinary circumstances, be recalled, and are therefore said to be forgotten.

Ideas which can under *no* circumstances be recalled probably do not exist. Sub-class *a* forms our stock of ordinary working knowledge, and the only stock we have, according to the common notion. But it is probable, as will be repeated hereafter, that all these classes of ideas, except Class 1, are factors in our thinking, and do their part to define the particular way in which, out of an infinite number of possible ways, our minds are to think.

The development of man, both of the race and of the individual, by civilization and by the education of the school-room, is in the direction of increasing the realm of consciousness. The civilized man is far more conscious than the savage, both extensively and intensively. The educated man is likewise more conscious than the ignorant peasant. But the process of development does not increase what man is actually conscious of, so much as what he *can* be conscious of; it is not Class 3 that is enlarged so much as Class 4. Civilization and education both serve to bring up ideas from Class 1 to Class 4; to increase the number of ideas that *have been* before consciousness. All ideas that ever have been before consciousness are part of the knowledge of the individual, and serve as part of his education. The object of man's development is, then, to increase Class 2 relatively to Class 1; to increase Classes 3 and 4 relatively

to Class 2. That is, of the two kinds of unconscious ideas in the mind, previously mentioned (those which have, and those which have not, been before consciousness), the object is to increase the second relatively to the first. This has probably been the process of development of our consciousness of the movements of our body. At first those movements were performed at random, until habit taught us how to perform consciously the right action for our purpose. We learned how with pain and difficulty ; and, while learning, were conscious of performing the motions. Then the frequent performance of the motions begot habit, which finally enabled us to perform the motions unconsciously. Probably the proper motions of all our vital organs followed such a process, and we may once have been conscious of performing the motions of the heart and other vital organs. We may even yet be conscious of the motions of breathing, which seem to be yet in an intermediate stage of development. A complete history of this progress from conscious to unconscious action is seen in the piano-player, who, with difficulty, learns to perform consciously each separate movement of the fingers, but with fully-acquired skill, is able to perform all these motions unconsciously, and to thus give attention to other and higher matters. The object of education seems to be, therefore, to increase the possibilities, the potences of consciousness, rather than its actuality ; to transfer ideas from the first of the two classes of unconscious ideas heretofore mentioned to the second. And the length of the process seems to be proportioned, in some sort, to the state of development of the species : a chicken can walk as soon as it leaves the egg, while a human child can only walk after long practice, during which it is conscious of every step it takes, and only gradually loses that consciousness.

The importance of these facts to the science or art of education is of the very highest kind. Our unconscious ideas are only made consciousin order that they may sink back again into unconsciousness. The process begins and ends in states of unconsciousness which are long, while there is but one short state of consciousness in the whole process. The conscious part of our minds may, therefore, be compared to that point on a large wheel which touches a tangent, while all the rest of the wheel may represent the unconscious part. Every point on the periphery of the wheel may be made to touch the tangent, but only one point ever does touch it at any one time. The work of instruction is to enlarge the wheel ; the work of education is to so fashion it that as much as possible may be brought to the periphery, and thus be made capable of touching the tangent.

We ought now to have learned at least two things : First, that

education and instruction are, when compared with each other, distinct processes; Second, that instruction should not busy itself with trying to bring its knowledge directly into consciousness, since that attempt is an unnatural and most wasteful process. Instruction has to furnish the mind with ideas; education has to bring from unconsciousness into consciousness:

*First:* Innate ideas, if there are such.

*Second:* Ideas acquired empirically, and not yet brought to consciousness.

*Third:* Ideas that have once been before consciousness, and which, when brought again before consciousness, are said to be remembered.

In this account we have taken it for granted that there are two ways of acquiring ideas by instruction: 1. Unconsciously; 2. Consciously.

These two methods of instruction are methods of getting empirical ideas into the mind. All ideas of experience,—such as the facts of history, the physical sciences, except, perhaps, the so-called *a priori* principles at the bases of those sciences, the ideas and facts of every-day life which form our experience of men and things,—must be acquired by instruction, by drawing in that which was out of the mind; as education is a process of leading out to consciousness that which was already in the mind. In both education and instruction it will be noticed that the process is attraction, not propulsion,—a pull, not a push. In instruction it is the pupil who "draws in"; while in education it is the teacher who "leads out." A pushing or cramming process is, in both cases, out of place. The teacher who aims to push what he desires to teach straight up through the mind directly into the presence of consciousness, does not use a natural process, and spends vast labor in vain.

All that an instructor can do is to present facts in many varied forms, to arouse in the pupil's mind an interest in those facts, and allow him to draw them in. Persistent pressure of those facts against the mind will force the pupil to take them into his consciousness, but a natural process of acquisition allows new knowledge to remain awhile in the outer courts before being admitted to the presence of consciousness.

That the mind does acquire most of its knowledge unconsciously can be seen by a little reflection on the ways in which all our experience has been acquired. The beginning of our acquisitions in childhood is certainly unconscious. A child is led time after time over the streets about its home, and it soon learns to find the way alone. When and how that knowledge of geography was acquired the child

does not know. And that method of unconsciously acquiring a knowledge of places can be illustrated from the experience of each one of us. How many times we say, "I cannot tell you how to get there, but I could find the way myself!" So we unconsciously mark the characteristics of men and things,—that is, we unconsciously get knowledge of men and things. If a man be asked to describe the appearance of a person whom he has seen, he may be entirely unable to do it. I have often been asked if such a person had a black or a light moustache, a black or a brown hat, a frock or a sack coat, a dark or a light complexion, black or gray eyes; and, though I knew the person well, have been unable to answer such questions about him. Not long ago I asked a man if his father had a moustache, and he could not tell me. But I need not say that a change in any of these features by which we recognize persons that we have met, would be instantly noticed when we met them again. On meeting a friend, after a long absence, how often do we say, "There is something changed in you,—what is it?" And only after comparison with our remembrance of the person as he used to appear, are we able to tell just what the change is. In these cases we have acquired an unconscious idea of the person, but are unable easily to call that idea into consciousness. We do not notice consciously most of the more familiar things about us. We seldom consciously think how our house is painted, what the shade of it is, what the pattern of our furniture is, or whether the door opens to the right or the left, out or in. But how quickly should we notice a change in any of these things? Think of the door that you have most often opened, and tell, if you can, whether it opens to the right or to the left, out or in. Yet, when you open the door, you never put your hand on the wrong side to find the latch, nor try to push it when you know that it opens with a pull.

It is in the unconscious way in which we acquired a knowledge of such every-day matters as these that we acquire by far the greater part of our empirical knowledge. What is the precise characteristic in your friend's step that enables you to recognize it when he is coming? Did you ever consciously think the idea, "If I run into a solid piece of matter I shall get hurt, or be hindered in my progress," and do you avoid running into obstacles because you ever consciously acquired and thought that idea? A child sees its parents and friends take a key to unlock a door, push the latch to raise the window, push or pull things to get them into certain places, and the child performs those actions without ever knowing how it learned them. Sometimes, as in the cases just cited, knowledge thus un-

consciously acquired remains unconscious, and its possessor is unable to think it consciously ; but sometimes knowledge thus unconsciously acquired reaches consciousness, and its possessor can tell you how to unlock a door or raise a window, though he himself acquired that knowledge unconsciously.

The results of this unconscious acquisition are seen in the empirical characters of us all. A child born and bred in a good family acquires the good breeding that characterizes him without being conscious of the acquisition. He meets boys who were bred in other circumstances, and sees the contrast between himself and them, but the boys were not conscious of acquiring the manners of both action and thought which produced that contrast.

The manner in which we acquire language, including facility in its use and style of expression, is perhaps the most striking instance of unconscious acquisition. A few words may be acquired by imitation, as by noticing the articles that others call chair, table, house, etc. ; but the vast majority of our words, including all but a few nouns, and all words of the other parts of speech, must be acquired unconsciously. Who taught you the meaning of "now," "almost," "already," "virtue," "to be," "to do," and the rest ?

The varieties of expression and style are almost as numerous as words, and each person has his own. The use of phrases and expressions, both in speech and in writing, so as to express our exact meaning, is learned unconsciously. I cannot tell when I learned the precise meaning attached to the different ways of saying, "*I* am coming," I *am* coming," and "I am *coming*." All the various uses of inflection and emphasis in language are acquired unconsciously. How natural and easy such unconscious acquisition is, can be seen very plainly by the light of these illustrations. The barefoot boy makes this unconscious acquisition without effort of any kind ; it is only when he is put into school and obliged to learn consciously that effort and difficulty come.

So, likewise, do even the most accomplished authors acquire their ability to convey their meaning. Every phrase of a good author might be put in a hundred different ways, and mean almost the same thing. But only the author's own expression will mean quite what he meant to say, and yet he did not consciously choose just that expression rather than any other : the words that fitted his thought came at his bidding, but how, he cannot tell. Why we use this form of expression or manner to one person, and that form to another, we cannot say ; but we unconsciously got the idea that this, and not that, was the form we ought to use. A person with ability to exactly suit

his words and actions to the character of the person with whom he deals, is said to have tact: tact is an entirely unconscious acquisition.

The two methods of acquisition may also be aptly illustrated by the two ways in which men learn grammar, or foreign languages. A boy brought up where none but grammatical language is spoken, learns to speak grammatically without consciously knowing it. A boy who learns grammar at school is painfully conscious of the way in which he acquires his grammar. So, too, a person who goes to France or Germany learns French or German unconsciously, and all the quicker because he learned it unconsciously; while a person who goes to a teacher at home learns French or German very consciously, and the length of time occupied in learning is in proportion to the consciousness of the process. Some persons will learn a foreign language by first getting a crude knowledge of its grammar, and a vocabulary of two or three hundred words, and then beginning to read novels in that language until they tumble into it, rather than learn it.

The mind seems, also, to have a faculty of getting an effect from the mere hearing of ideas which it does not understand or consciously take in. We read a book for the first time and cannot recite a single idea from it, but it has left an effect upon our minds which shows itself in our thought. We can understand the book better on the second reading, and that fact shows that the first reading left an effect upon our minds. If a concrete case comes up in our experience which has any relation to the principles that we read about, but did not understand when we read, we can make a judgment upon that case with much more intelligence than we could have had if we had not read the book.

Every one knows how opinions and prejudices are unconsciously formed. A book-publisher is well aware that a good title will often make the fortune of a book, while a poor title will as often spoil it, simply because of the impression that the title unconsciously makes upon people. I long refused to read "Adam Bede," because the title in some way sounded flat, uninteresting, dry, gray, dull, anything you please but attractive. Somewhat the same unconscious impressions make people look upon some letters, like M, V, B, D, etc., as heavier than N, F, P, T, etc. Thus it would seem shockingly *malapropos* to name a deep philosophical novel "Kitty" or "Polly." Such a book, so named, would hardly attract the readers who would be suited by it, and those who like light reading and took up the book for the sake of the title would soon throw it down in weariness. The book would "fall flat on the market." It must be admitted, however, that a large part of the benefit derived from reading a book rapidly for the first

time, before making a careful study of it, consists in mere exercise of the nerve-processes which correspond to the peculiar sentences and phrases of the book. Thus, by reading a book, no matter how rapidly or carelessly, our brain-processes which do the merely linguistic work of taking in the form of the sentences, are accustomed to the work, and do that work mechanically, without help from consciousness, when the book is read a second time. But besides the purely mechanical gain, the mind takes in at a first reading unconscious impressions which are extremely valuable to it in its future more careful study.

But we need not further multiply cases of unconscious acquisition, for abundance of examples may be found by referring to Hartman's books, or to the books of his followers, and each person can find multitudes of examples in his own experience. Almost all our experience is acquired unconsciously. A little of it which strikes us peculiarly, or in which our interest is for any reason excited, penetrates to our consciousness when we first acquire it, but only a very little. Our opinions, our judgments, and all our thoughts, are molded or guided by our unconscious knowledge. Every idea in our minds, whether held consciously or unconsciously, serves as a boundary which defines the position and relations of every idea that we think.

The machinery of the mind may serve to explain away some of the mystery that beclouds our understanding of its ways of working. The physical organ of mind is the brain, and some physiologists mean by that term the entire nervous system. All that we know of the relation between mind and brain serves to prove that, for every idea or change in the state of the mind, a corresponding change takes place in the brain. A change in the mind is followed or attended by its corresponding change in the brain, and a change in the brain is attended by its corresponding change, or idea, in the mind. That is, a mental fact, an idea, is always attended by a physical fact, a nerve-process. Excite the nerve-process and you arouse the idea; arouse the idea and you excite the nerve-process.

Now all actious performed with a purpose or an end in view have a mental element, for there must be an idea of the purpose or end somewhere. In this sense, then, even the lowest of our actions, including reflex actions, are partly mental in that they are attended by the idea of purpose and the adaptation of means to an end. On this account some psychologists claim that even our lower nerve-centres, which govern the lower and reflex actions of our body, have ideas, but are unconscious.

We will, however, not enter into the discussion of that matter,

but merely state that all our actions, since they are all actions for a purpose, are attended by an idea; if our actions are unconscious, their accompanying ideas are unconscious. It appears, then, that every movement of our body is preceded by a change in the brain and an idea in the mind, conscious or unconscious. Every movement of the body is preceded or accompanied by a nervous change; every nervous change is accompanied by an idea, conscious or unconscious, or by the modification of some idea, or ideas. A nervous change *must* accompany a mental change or idea, and *may* cause a muscular movement.

But, while nervous change must precede a muscular movement, we can regard an idea as either the cause or the effect of the excitation of its accompanying nerve-process, and the excitation of the nerve-process as either the cause or the effect of its accompanying idea. It is probable that thought causes nervous changes as it is also probable that nervous change causes thought. Our contact with the external world causes in our bodies nervous changes which produce sensations, which, again, cause other nerve-changes which arouse ideas in our minds. Disease of the nerves causes the production of ideas in the mind which have no outward counterpart, as in lunacy. But in reflection, thought is probably the cause, not the effect, of nervous change; and it is extremely probable, as will shortly be shown, that nervous change is never the original cause of the *existence* of an idea in the mind, but only of its *appearance* at the time of the nerve-excitation.

Now we know that the vast majority of nerve-changes take place without affecting consciousness. Yet is probable that every one of those nerve-changes is accompanied by an unconscious idea, or by a modification, in some measure, of the thoughts. As will be shown below, it is most probable that those nerve-changes which are made in the brain by contact with the external world, but which have no corresponding idea in the mind, do not produce ideas in the mind, but make modifications of the nervous structure which do modify those nerve-processes which are accompanied by ideas. But after a nerve-process *is* formed with a connected idea it may grow from the extreme of faintness to the extreme of definiteness, and there may be all degrees or stages in the progress of an idea, from the extreme of unconsciousness to the most vivid consciousness.

The first excitement of a nerve-process may be very weak, and its corresponding impression on the mind be very faint; but every reëxcitement of that nerve-process may increase the depth of the impression on the mind until the idea becomes strong enough to penetrate to consciousness. Examples illustrating this may be furnished in abundance by every one, but perhaps in greatest number by minds accus-

tomed to reflection. Thus, I am busily writing and absorbed in thought when some one speaks to me; I do not notice them, and keep on thinking and writing; but let the speaker say the same words repeatedly in the same tone, and I will become conscious of them. The taps of a door left ajar, and swayed by a gentle wind, are often not noticed by a person in the room who is busily thinking or asleep; but the constant repetition of the taps finally excites consciousness, and they become unbearable, so that the person is aroused and rises to shut the door.

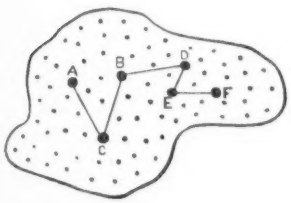
Sometimes the continuance of the excitation of the same nerve-process makes the mind go through the complete process of education, — starting with the unconscious acquisition of the idea, going through the conscious possession of it, and then allowing it to fall back again into unconsciousness. Thus, a person who goes for the first time into a room where there is a clock, will notice the friends he finds there and all the strange and pretty things about him, and only when he has got used to them, and his excitement cools, will notice the ticking of the clock. His interest is excited; he listens to it till its monotony grows wearisome, and gradually grows, like other people, unconscious of it.

But repetition is not the only means of bringing unconscious ideas to consciousness. Interest will work the same result much more quickly, and is likely to produce a better result. How quickly anyone will learn that which he likes to study, and which he is therefore interested in! The great secret that teachers try to learn is how to interest their pupils; and they know the reason well enough, even though they are unconscious of it, as they often are. Many things are often said in our hearing which we do not notice; they go "in at one ear and out at the other," we say. But if any occurrence makes us interested in any one of them, we can often call them up to consciousness. I may have been in a room while two men were talking, who casually said that they were in a certain place at a certain time, but as that fact and many others which they mentioned had no interest for me, I did not notice it; it merely made a nervous change in my brain, which caused an idea in my mind that was not strong enough to penetrate to consciousness. But suppose a law-suit arises in which my interests are at stake, and it becomes important to me to prove that the two men were in the place at the time they had mentioned before me, I try to recall what they said; I rack my brains and gradually call to consciousness one thing after another that they said, until I come to the fact that I am in search of. My interest in what they said has roused an otherwise unconscious idea to consciousness. Interest has accomplished the same result that

repetition usually does, and has accomplished it much more quickly than repetition could have done.

Repetition and interest are, then, the two chief means of mentally reviving ideas. These two processes are mental, and proceed intelligently; the mind in using them keeps its purpose in view, and chooses the ideas that it needs from the mass of ideas at its command. By these processes ideas are fixed and revived directly from the mental side. But ideas may also be fixed or revived from the physical side, by excitation of the nerve-process. Thus, for example, disease will serve to fix ideas in the mind, as in hypochondria, or to revive ideas, as in drowning. But the fixation and revival of ideas, by excitation of the nerve process is an indirect process, and, being purely physical, proceeds at random, without intelligence or choice.

One idea is as likely to be affected by nerve-disturbance as another. This fact seems to furnish a reason why we must consider that thought is the cause, rather than the effect, of nerve-change. This furnishes a reason against the dictum that "the brain secretes thought as the liver secretes bile." For the peculiarity of thought is, that it proceeds with a definite purpose in view; is this, rather than that; for this, rather than that reason. A train of thought is a constant succession of different and difficult selections. If the cause of the thought were physical, the thoughts would come helter-skelter in a hodge-podge. If they do not come so, but come with any order at all, the idea of order or of purpose is behind them, and that idea can receive no explanation from physics. Moreover, it is most likely that nervous change does not *produce* thought, but merely fixes and revives it after it has been produced and has made a nervous impression. Nerve-change cannot produce nerve-processes which have any corresponding idea, even an unconscious idea, in the mind. All that nerve-change can do is to fix or revive nerve-processes that have corresponding ideas in the mind after those processes have been formed by thought. Thought is a cause of nerve-change; nerve-change, the cause of thought. The nerve-changes which are produced by merely physical causes can only affect those nerve-processes that have ideas connected with them, by either fixing or reviving them, or by modifying the substance in which they lie, and thus modifying their relations to each other. Thus, if we say that the dots and lines *a*, *b*, *c*, *d*, *e*, *f* form a nerve-process corresponding to an idea, *x*, while all the dots unconnected by lines are the parts of the brain not yet formed into idea-nerve processes, we may suppose any



changes whatever to take place in the chaos of unconnected dots without forming a connected nerve-process, like *a, b, c, d, e, f.* That and similar nerve-processes can be formed only by the occurrence of an idea in the mind, which straightway arranges a nerve-process as its physical correlate. That arrangement, being mental and made with a purpose, forms a harmonious connection of nerve-particles. Nerve-changes which proceed from merely physical causes can form no such connection or harmony, but can merely modify the relations of such processes as *a, b, c, d, e, f* to each other or to the rest of the brain, or can fix or revive them. It is this modification which constitutes the peculiar way in which each person looks at the ideas that enter his mind, and which makes up a large part of his peculiar personality. If nerve-processes, with ideas attendant upon them, could be formed by physical causes, we could conceive that many of our ideas originate by accidental nerve-changes, and that a system of education might be possible in which the teacher should excite certain nerve-processes in his pupil's brain in order to convey the ideas that he wished to teach. Education would then be a science of physical manipulation, and would be a branch of applied physiology.

It is enough for our purpose, however, to know that ideas may be fixed or revived by nerve change after they have once been thought by the mind. Thought without nerve-change is impossible, but thought is the cause of nerve-change, and here, as always, cause is simultaneous with effect, not precedent. Thought precedes nerve-change in our conception, not in time; logically, not temporally.

Perhaps this physical mechanism of thought may do something toward helping us understand how unconscious thought is possible. It is easily conceivable that such nerve-processes as *a, b, c, d, e, f* should be of various lengths and depths. It is conceivable that our conciousness of an idea shall be relative to the depth of this nerve-process; that is, to the depth of the impression that its corresponding idea makes on the mind. Repetition of an idea, or interest of the mind in it, may increase the depth of the impression until it reaches consciousness. Thus we may suppose that there are in the brain multitudes of nerve-processes which correspond to ideas in the mind. Those processes must have a certain depth before they can affect consciousness, and all processes which have a depth less than that, represent unconscious ideas. This, at any rate, is the most likely illustration that we can find; and, even if it were not true in fact, it would nevertheless serve to illustrate the facts which *are* true. Since "nerve-processes" and ideas always accompany each other, they are often used as almost synonymous terms.

The mind does undoubtedly hold unconscious ideas, and some such physical mechanism as we have described is the one that the mind uses. When it acquires unconscious ideas, those ideas make nerve-processes in the brain which are not deep enough to affect consciousness. When, by repetition or by interest of the mind in what relates to those ideas, their nerve-processes become deep enough, they reach consciousness. Of course it will easily be seen that the deeper the nerve-process the more likely will it be to be retained; that is, the more vividly or the more often we are conscious of an idea, the more likely we are to remember it, and that, therefore, conscious ideas are, *ceteris paribus*, more likely to be retained than unconscious ideas. But in this connection it must be remembered that repetition is not the most potent means of bringing ideas to consciousness, and that constant repetition (as in the ticking of a clock) will make the idea pass through the conscious, back to the unconscious, state. An unconscious idea may, therefore, from its very frequency and persistence in the mind, remain unconscious, and some unconscious ideas are thus more permanently fixed in the mind than many conscious ideas. In fact all the fundamental ideas or great principles of thought, action, and life are unconsciously held by us, and yet they are most permanently fixed in our minds. But the common and less fundamental ideas that we think, are usually more likely to be permanently fixed in our minds if we are made conscious of them, than if they are allowed to remain in unconsciousness.

## THE TOPICAL TEACHING OF HISTORY.

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IT is a cause of deep regret that so many pupils leave school believing that history is of little use except as a means of testing their memories, in order that bad marks or other punishments may be given for failing to remember. They are usually forced, by the method of treating this subject, to regard it as a confusing collection of dates, names, and events, related to each other only by chronology and the weak linking afforded by the names of rulers alike uninteresting, be they names of kings, emperors, presidents, or governors. Foreign and civil wars, commercial progress, the extension of the influence of the church, political intrigues, international diplomacy, constitutional growth, the development of the people, literary culture, and educational advancement may be found side by side in the same chapter, — utter strangers in everything but the accident of having occured in the reign of the same sovereign. The same old kings who ruled the nations have continued to rule historical writers and teachers until recently; indeed, do still govern the vast body of teachers in their teaching of history. The constitutional, intellectual, and religious development of a nation are served up in scraps as carved by the various kings; great principles, and the mighty movement of true progress, are treated as secondary matters and tacked on as mere ornaments for the coats of successive sovereigns. The rulers with their whims, their physical, mental, and moral peculiarities, and their dates, are allowed to occupy the first place in most school histories, and the genuine work of the world is seen through the crevices between the kings. Events are fitted to the sovereigns, who should have a place in history only as they influenced events. This is a fundamental error in writing or teaching history. Dr. Arnold held that the record of the development of the "race institutions and religion" of a country constitutes its real history, and modern writers and thoughtful teachers are acting in accordance with this principle to a large extent.

A merchant who wishes to learn the results of his business transactions at the close of the year, and to satisfy himself as to the comparative importance of his various trade enterprises, and their relative influence on each other, might possibly do so by examining his day-book alone, but it would require the labor of months to accomplish what he could do in a few hours by consulting his ledger. Histories

are usually merely day-books of the business of nations, and so students read them through and through without remembering clearly the events narrated, their causes, or their immediate or ultimate bearing on any of the departments of national life or progress. The continuous concentration of thought which is so essential in the formation of correct conclusions concerning the effects of national customs or tendencies, is impossible when the attention is distracted by the presentation of so great a variety of unconnected events to the mind. If these events were grouped in ledger form so that they could be taught topically, the student would save much time and be able to make more satisfactory progress. Instead of giving facts relating to all kinds of events promiscuously, as they occurred, and as they would be recorded in a diary, they should be classified under a few leading heads, and the consecutive history of each class during the period under consideration taught independently. The chief elements that go to form the life and true development of a nation should be selected, and the history of each element narrated without referenee to the others, except in so far as it is directly related to them. The historical topics should vary slightly for different periods and nations, but the following will generally include all that are necessary: 1. External History, including foreign relationships and wars, the loss or extension of territory, etc.; 2. Constitutional Growth; 3. Religion; 4. Literature; 5. Social Development; 6. Commerce; 7. General Progress.

Before beginning the topical study of the history of a country in detail, it is essential to glance at its history as a whole, and subdivide it into periods by noting the great changes that have taken place during its growth. This may be done in a single lesson, and such a lesson will prove of great advantage to the pupils. It gives them a general idea of what they have to learn; it connects the present with the past in their minds; and, most important of all, it fixes in their memories a connected series of landmarks, about and between which they can readily group events as they become acquainted with them. This will greatly facilitate the learning and retention of the facts of history. It is much easier, and usually more important, to remember that an event occurred during a certain period than that it happened at a certain date. The mere date may be practically unsuggestive, while the association of the event with a certain historic period can scarcely fail to call to mind a series of related facts. The dates which bound the periods should be fixed, and thoroughly learned, and then events should be remembered as related to them. Different teachers may adopt various bases of division in deciding the number

of periods into which to divide the history of a country, and the best basis for the history of one nation may be quite unsuited to that of another. It will usually be found best to make the dividing lines between the periods correspond with the dates which mark the great formative eras in a nation's history.

Having thus given a general sketch of the history of a country, and divided it into periods, the teacher is ready to proceed with the filling in of the necessary details. These should be few or many, according to the age of the pupils. Whether few or many however, they should be taught topically. The following are some of the reasons for recommending this course:

1. Events are more easily learned and remembered by this than by any other method. The ease with which impressions are made, and the length of time they remain fixed in the memory, depend chiefly upon the degree of attention given to a subject by the learner. When all conceivable kinds of historical events are recorded on the same page, it is not possible for the reader to concentrate his attention on those having a special influence upon any particular department of historical study. If he is seeking for the causes which led to a great constitutional change, he should not have his attention distracted by anything which did not in some way affect the constitution. He will thus be able to fix his attention entirely on one subject at a time, and the certain result of such a course will be clearer conceptions and more permanent impressions.

In a subject like history, the successful study of which depends so largely on the memory, it is of the utmost importance that the laws of "simple suggestion," or "association of ideas," be taken advantage of to the fullest possible extent. The most important primary law of association of ideas is the law of resemblance or similarity. One fact will suggest another of a similar kind, and so a series of thoughts referring to the same subject will be recalled in the mind much more readily than if they related to dissimilar subjects. The application of this principle to the study of history is clear. In the topical arrangement of events, facts of a similar character, all leading to the same end, are learned in consecutive order, and will therefore be more easily remembered in accordance with this fundamental law of association through similarity. It may be urged that "contiguity of time" is also a law of suggestion, and that the fact that events occurred at the same time will serve to associate them in the mind, however much they may differ in character. It must be remembered, however, that "contiguity of time" refers only to the experience of the individual who tries to remember. If two important

events occurred about the same time, both of which directly affected me, the remembrance of one of them will be pretty certain to recall the other to my memory. Even if these events had not directly affected me, but merely interested me, they would be likely to recall each other. This would not be the case, however, if the events had occurred before I was born. We remember events by "contiguity of time," not because they occurred at the same time, but because they affected us at, or nearly at, the same time.

2. The teaching of one department of the history of a country facilitates the teaching of every other department. The events immediately connected with any one of the topics into which the history may be divided will have a bearing more or less direct on some, if not all, the others. When the constitutional history has been studied it will be found that the history of the church, or of literature, or the social development of the people, during the same period, may easily be fitted to it. The teaching of each additional topic paves the way for the more easy learning of those which are to follow.

3. When one department of history has been taught, the teaching of each successive department reviews the work that has been done. The connection existing between the various topics compels this reviewing. It is done, too, in accordance with one of the most important, though most neglected, principles of the science of education; it is done incidentally. The portions already learned are reviewed, not as set lessons assigned for review, but in natural connection with the teaching of new work as a necessary part of that work. It will be conceded by all, that reviewing is essential to fix facts in the memory. It must not be forgotten, however, that, when reviewing is merely a repetition or re-teaching of a lesson already learned, it soon loses its interest. Pupils cease to give active attention to it because it has lost the charm of novelty. Facts previously learned should be impressed on the memory by being used as the basis for acquiring additional knowledge. The ploughshare of knowledge should be kept bright, not by frequent rubbing, but by constant use in turning over fresh soil. This is the highest kind of reviewing. It is the only kind to which a child is ever accustomed before it goes to school. This method of reviewing incidentally, not directly, — by using knowledge, instead of merely repeating it, — is only possible in the subject of history, when it is taught by the topical method. Instead of traveling over the path of history once only in search of a promiscuous collection of facts, the pupil goes over it several times, each time with a specific object, and uses in each successive excursion the information acquired previously.

4. By teaching topically the teacher develops the reasoning powers of his pupils, and trains them to read history intelligently after they leave school. It is most desirable that students of history should be taught to trace causes to effects, and effects to causes. The facts of history are of little value as information merely; the lessons to be drawn from them constitute their real value. When teaching topically, events are not presented as of importance on their own account, but as elements which together produce certain results. The circumstances are regarded as subordinate to their consequences, and so the study not only exercises the memory, but calls into action the higher faculties. This naturally makes students take a deeper interest in the study of history as they grow older and their reasoning faculties develop, while it is a well-known fact that, as usually taught, the interest grows less as the pupils advance in years. This fact has led many thoughtful writers to question the propriety of teaching the subject at all in school. It is certainly most deplorable that the vast majority of pupils have such a distaste for the subject when they leave school, that many of them never read an historical work afterwards. This cannot be the fault of the subject itself. It can only be due to the character of the school-histories, and the methods of teaching which are commonly practised. It is clearly impossible to give pupils a sufficient amount of historical knowledge during the time they are at school, and it is therefore of the highest importance that the method of teaching it should accomplish two results: 1. It should satisfy the growing demand for a higher kind of mental activity than the mere exercise of memory; 2. It should give a pupil a decided taste for historical study after he leaves school, and should qualify him for pursuing such a course in a systematic and intelligent manner. Both of these objects are accomplished by the topical method of teaching the subject.

There is nothing in the preceding remarks which is intended to express disapproval of any of the excellent "Child's Histories," which are written in interesting narrative form, and are so well calculated to attract the attention of the young. The object has been to show that a taste for such narratives decreases rapidly as pupils grow older; that the "mere tissue of names and dates, and dead, unmeaning events," soon becomes wearisome, if the names, dates, and events have to be memorized; and that a more intelligent method of presenting the subject should be adopted by teachers and those who write school-histories.

## *A VISIT TO THE HARVARD ANNEX.*

BY REV. EDWARD A. RAND, A.M.

IT was a winter-sky above, full of gray clouds threatening snow, and a white landscape below, the day we sat foot upon the Appian Way. We had never expected to tread that "Regina Viarum," but it was our privilege at last to see it,—not at Rome, but at Cambridge, Mass.,—one of the smallest but proudest streets of this scholastic city. Here, flanked on one side by the classic piles of the University, and guarded in another direction by the famous elm of Washington, is the Harvard Annex. The homes of Longfellow and Lowell are not far away, and close at hand is that picturesque cluster of stone walls inclosing the Protestant Episcopal Theological School. The Harvard Annex, however, is not made by its surroundings, but challenges attention in itself. Not even the Appian Way makes it, and as little does the building that is its home. This is a very plain affair,—a chocolate-colored, two-and-a-half story frame house, modest while ample, like a Shaker bonnet. Its pitch-roof may look ambitious, but this is not to express a sentiment and voice the aspiration of literary young women, but only to shed the snow easily. The Annex occupies four rooms in this building, the two front ones in the first and second stories. From the reception-room, that has a look of home-comfort, you pass to an apartment that is used as a recitation-room. This is simply furnished; in the centre is an oblong table covered with a green-painted cloth, and there are blackboards at the right, where we noticed that some amateur mathematician had been chalking. One apartment overhead is used as a reading-room. Here have recently been accumulated six hundred volumes as the basis of a reference-library. Its quarters are in no crimson-tinted alcoves, lofty and ponderous, but a few plain wooden shelves support the infant library. The adjoining room is for purposes of recitation. A few pictures are on the walls, and in the centre is a second table covered with green-painted cloth. The chairs and a cabinet of apparatus in the department of physics, are about the only other pieces of furniture. The funds of the Annex, manifestly, go not for furnishings, but brain-work. In these rooms meet the various classes of young ladies, though a few go to the professors' houses. Ah! here is a chattering flock of the "annexed" beings themselves, bright-eyed young ladies, nigh the age of eighteen or twenty. They have been holding the fortnightly meeting of their association for literary pur-

poses, and still linger, chatting away. We think of Mary Somerville, so gifted by nature, and yearning for culture. When achieving an education, in her younger days, "every member of her family regarded her studies with disapproval or contempt." How she would like to look in upon the favored groups of the Annex! Who can say but that she does? We passed out of the Annex into the winter-cold, buttoning up our overcoat and our reflections also on the status and prospects of this recent Cambridge notion.

The Harvard Annex is "an attempt," as Mr. Arthur Gilman, the Secretary, puts it, "to bring the instruction of the best body of teachers in the United States to bear upon the education of women." The cradle of the movement was rocked in the home of Mr. and Mrs. Gilman, as the plan was devised by them. First mentioned to Professor Greenough, he opened a hospitable door to it at once, and has been a warm friend ever since. Other Harvard instructors favored it, and were willing to be teachers. "My mother did not *prevent* me from reading," said a literary woman of her early home-training; and this was President Eliot's attitude toward the movement. His consent to its existence was necessary, and was readily obtained. A number of ladies, connected mostly with the families of Harvard professors, coöperated, and these were constituted a Board of Managers; Mrs. Agassiz, Mrs. Gurney, Mrs. Cooke, Mrs. Greenough, Mrs. Gilman, Miss Alice Longfellow, Miss Lilian Horsford; Miss Ellen T. Mason of Boston has recently been added to this number. There was chosen also an Advisory Board of five Harvard professors. These mapped out the country the students of the Annex might explore, appointing courses of selected study for special students, stating the terms of admission, and fixing the grade of instruction the same as that in Harvard. They marked out a course identical with that in the college department for all those willing to climb the rounds from Freshman to Senior. For those successfully pursuing any course of study, they appointed a certificate or diploma. The corporation of the University was only asked to grant certain library privileges and the use of the Harvard examination-papers, and this they did. It will be seen that this movement was a peculiar one; not an outside attempt of barbarians bringing their aries and testudo to break a hole in Harvard's sacred wall for the admission of woman, but a quiet, friendly effort inside of Rome to help certain daughters without. The Annex is of Harvard, and yet outside of it, entirely independent of the corporation, and yet entirely dependent on its teachers.

There had thus been a successful manufacturing of wheels and

track; but where was the money for running the new educational railroad, officially christened the "Private Collegiate Instruction of Women by Professors and other Instructors of Harvard College," but popularly known as the Harvard Annex? Friends of the movement subscribed over sixteen thousand dollars toward the opening of this new road of learning, and its continuance for four years at least. It was expected that the fund would be increased, by the fees for instruction, seventy-five dollars for any course, and two hundred for a full year. The proud Appian Way, by virtue of its name, could fittingly claim to be the place for the location of the Annex, and this is the third year that the wheels of the movement have been turning, the enterprise flourishing under the oversight of its Boards, and the prudent, genial, fatherly care of the Secretary, Mr. Arthur Gilman.

There were twenty students the first year, forty-seven the second year, and thus far this year there have been forty, a number that will undoubtedly be increased. Twelve are now taking their first year, nineteen their second, nine their third. Ten are taking the full academic course of four years. Twenty have already this year passed an examination, and will take their final examination in June. If the gauntlet be successfully run, this accession would increase the number in the regular academic course to thirty. The average age of those taking this course is about the same as that of the young men in like studies at the University. The age of those in special courses is generally greater. Last year all but eight of the students came from Massachusetts; and of the Massachusetts students the homes of all but six were within a distance of ten miles from the State House, Cambridge furnishing eighteen. This year the data are about the same, the students in special courses coming from all parts of the Union. In the past, institutions like the Academy at Bradford, Wellesley and Vassar Colleges, have furnished a very few students, but the largest feeders of the Annex are the high schools of Boston, Cambridge, and vicinity. There has been a steady increase in the amount of work accomplished by the young ladies. The first year there were fifty-eight members in all the classes, the second year one hundred and five members, and thus far, the third year, one hundred and sixteen.

Let us see what may be the fabrics of study these busy workers are weaving. Twenty-two are giving themselves this year to the courses in Greek; seventeen take Latin; twenty-eight, English; fifteen, German; four, French; one, Italian; ten, History; one, Fine Arts; eleven, Mathematics; three, Physics; four, Botany. Nobody this year, though, cares to look up at the stars or down at the min-

erals. Sanskrit calls in vain, and so do Philosophy, Zoölogy, and Political Economy at the present time. There are various courses of valuable University lectures open to the young ladies, which they are patronizing.

To show how many of the Harvard teachers are interested in this work, we mention the fact that twenty-nine classes, last year, were taught by eight professors, three assistant professors, and twelve instructors. Several interesting questions present themselves.

What is the standard of scholarship in the Appian Way? The marks are very high. It would be unfair to make a comparison between the Annex and the College, since so many at the Annex are specialists, aiming in a given time to accomplish everything possible in their department. If at any time the young men wish to make the comparison, however, the young ladies may be entirely at ease in permitting it.

Is the Annex-course of study practicable sanitarily? Entirely so. No wheels have broken under the strain of any burden of study. We fancy some are thriving on the annex-diet like the Scotch on oatmeal. Why should the course of study be unhealthy? Brain-work is generally considered to be promotive of health, and why should the cultivation of woman's brain-powers be unhealthy? That study may be wisely tempered with exercise, and the body be made strong to bear up the brain, Dr. Sargent of the Hemenway Gymnasium has generously provided rooms and suitable apparatus and has given the young ladies instruction.

What is the aim of the ladies in pursuing these advanced studies? It is safe to say that the drift in general is toward the work for which nature has marked out woman-kind, and to which their preferences usually take them, — a calling put this way by a clever writer; "Nothing is more powerful than a pious and sensible woman to bring a man into proper order, and to mould his soul as she will."

If this be woman's work, and yet man be the superior being and woman the inferior, as some claim, then certainly she ought, through her education, to be specially furnished for this great task. If the two be on a level, as we claim, then it is only fair that one should be as well educated as the other. There is at the annex a manifest tendency toward the study of the classics, — a tendency that we think also to be a wise one. Plato is a popular author at the Annex, though he is credited with this ungallant remark about women,—that men who became cowards transmigrated after death into the forms of women; —not their *souls*, we would add. It would seem as if these linguistic pursuits in the direction of the Latin and Greek indicated a tendency

toward journalism or some kind of authorship. To use English with precision, to hit with our words the mark exactly, is one of the great demands of the day; and if we would know the fittest kind of pebbles to put into our slings, Latin and Greek will greatly help us; and it is very noticeable how many women at the present time have taken the field of life armed with a penholder. That many of the Annex students are also educating themselves to be teachers, is evident.

What is the relation of this movement to woman's admission to the University? There was no intention in the organization of the Annex to force such an issue, and none exists now, and yet the existence and success of the Annex will have an important influence on the question of woman as a Harvard student. A friend to the advanced education of woman criticised the Annex at first, declaring that it was postponing woman's admission to the University, and that the grade of instruction to women would be lowered. After a year of teaching in the Annex, sharply watching it, he conceded that he was wrong. His plan favors the immediate admission of women to the University, but that would have necessitated a revolution. The Annex, if it result in woman's admission, will bring her in naturally. As for letting down the grade of instruction, he saw that it was impossible; the girls would not allow it!

The funds raised for the Annex promise to continue it six years in all, rather than four, as at first contemplated. After that time the Board of Managers purpose to leave with the public the responsibility for its continued existence. If the wheels of the Annex turn no longer in the Appian Way, we fancy it will quit; not because the wheels have broken down, but because they have been fitted to turn, and achieved a still better record elsewhere. This young institution will become a permanent one, equipped as never before for its work. We can see one other may-be, — that the Annex will pass out of the Appian Way because its students have passed between the posts guarding the entrance-way to the beautiful University lawn, to become students in the University. We hope this may be so, for the stores of scholarship accumulated there ought to be made available to the greatest number possible, and in that case woman must be included.

However, *omnia sunt humana.* Of these two things we are certain, — that the Annex has done, is doing, will do, a noble work. It is shedding from its modest candle in the Appian Way some ray of light on the question of the higher education of women. It is also confuting the latter half of that piece of pig-tail wisdom from Cathay which finds some echoes here in America: "The glory of a man is knowledge; but the glory of a woman is to renounce knowledge."

## *BASIS OF MORALITY.*

PROFESSOR J. B. MAYOR delivered an inaugural lecture at King's College, London, some time since, upon the question, "What is the good of Moral Philosophy?" The following abstract is transcribed ("Mind," XIX.,) for two reasons: (1) because of the general value of the lecture; and (2) because of the theory of morality which was promulgated by the professor. The abstract of the lecture says:

"Professor Mayor summoned up the popular objections to this study under three heads: (1) It tells us nothing new, but merely formulates truisms; (2) It busies itself with speculative questions, and is of no use for practice; (3) All other moral teaching is superseded by Revelation. After expressing a qualified assent to objection (2), as far as it referred to the actual procedure of modern writers on Ethics, he went on to examine objection (3), and asked what was to be done with those who did not accept Revelation; were they to be declared incapable of morality? He pointed out that to base morality on religion was to invert the logical order, since our moral instincts formed the main foundation of our belief in a God as in a revelation professing to be divine; that the Bible itself presupposed a knowledge of right and wrong; that in many points the moral teaching contained in the Bible was either transitional (*e. g.*, the prohibition of usury, and of things strangled), or incomplete (as in reference to slavery); that in any case moral philosophy was needed in order to systematize, to develop, and to apply the teaching contained in Scripture. Turning to objection (1), he remarked that it assumed the existence of one recognized rule of life and theory of conduct; but if we looked not to words but to actions, we should see that there was no such uniform theory of conduct; the ideals of happiness, duty, and virtue varied for different races, periods, classes, and ages. It was the office of 'descriptive ethics' to bring into clear light the views half-consciously held by those who were not philosophers. Some of these views had been systematized and become recognized ethical theories, as the cavalier's or soldier's view in the code of honor, the lawyer's view in jurisprudence or the theory of right. The study of descriptive ethics was not merely of interest in itself, — it was practically useful as supplying data for our own guidance. To know what, as a fact, men have believed and acted on under varied conditions of life during the past ages of the world, will help to determine the rule of conduct for the small fraction of humanity which happens to occupy the earth at this moment. Passing to practical ethics, we find modern life governed partly by old traditions, partly by novel theories propounded as so many new gospels by their several schools. It is the office of moral philosophy to bring them all before the bar of reason, to strip them alike of venerable associations or pretentious assumption, and exhibit the underlying principles in their naked reality. Whatever the question raised may be, when it once takes the form, 'Ought I to do this thing or ought I not?' the ultimate decision rests with ethics. Particular sciences, such as medicine or political economy or theology, may be called in to give their evidence as to the facts involved in the case; but the ethical end, which is the perfection of humanity, necessariiy overrides every subordinate end. Besides its descriptive and judicial functions, moral philosophy has a no less important work of discovery, to advance the lines of ethical thought, to devise new means for promoting the upward progress of humanity. This branch of the subject was illustrated by a reference to various ethical desiderata, — *e. g.*, the determination of the relation between absolute and relative ethics, between ethics and politics, between ethics and political economy, and the establishment of a scientific theory of education."

REMARKS UPON THE ABSTRACT.

Professor Mayor says "that to base morality on religion was to invert the logical order, since our moral instincts formed the main foundation of our belief in a God as in a revelation professing to be divine; that the Bible itself presupposed a knowledge of right and wrong." These assertions raise the whole subject of morality and religion. Which one of these two conceptions is the condition precedent of the other? In general terms, religion designates the feelings and acts which relate to God, and may or may not be independent of revelation; morality designates the feelings and acts which relate to one's fellow-men. Man is endowed by his Maker with certain faculties, among which is that which is sometimes called the moral sense, or conscience, which is dual in its constitution, — one of its functions being to compare the acts of its possessor with an assumed standard of action; the other function being to create a feeling of obligation, duty, or oughtness upon the soul when the comparison is completed. After the standard is erected, the rest is relatively easy; the moral sense does not create a standard; it instinctively moves out toward a standard to which it clings, and thus lays a sense of duty upon him to whom the conscience belongs.

What faculty creates the standard by which to gauge conduct? The faculty of intelligence, or the power to know; speaking more precisely, it is the function of the creative imagination to provide the standard, which is tested by intelligence and faith. The case now sums to this, when metaphysically considered: (1) The creative and intellectual powers of man erect a standard of action as a condition precedent to the exercise of conscience; (2) the first function of conscience is to compare together this standard and the contemplated act; and (3) the second function of conscience is to create the impression, or conviction, of duty in the mind of him who contemplates to perform the act. From these introductory propositions, it follows that the Bible can in no sense presuppose a knowledge of right and wrong, except in so far as any and all things to be known presuppose a faculty to know; as, mathematics presuppose an intelligence to know them, botany or a historical transaction presupposes a mind that may learn it; on the contrary, the Bible constitutes the materials from which the intelligence and imagination of man select standards to guide conduct; the conscience then comes into exercise and pronounces right and wrong of man's doings. Knowledge or faith precedes the action of conscience. The question thus resolves itself into this: Does knowledge of feelings and acts relating to fellow-men precede that of feelings and acts relating to God? The answer to this question will touch the logical order of morality and religion.

The Bible represents Adam as knowing his God and his relations towards Him at a time when no fellow-man existed. Here was religion and no morality. Eve joined Adam; both knew duty toward God; all their acts were gauged by their knowledge of God and their feelings toward Him.

Here were religion and morality, — the former being a condition precedent to the latter; for the conduct of these two human beings toward each other was founded upon the relations which they conceived themselves to sustain toward their Creator. The Bible is a history of the Hebrews, whose social and civil institutions were theocratic, — that is, religious, — in conception and in practice; whatever was done, either to God or to man, was done because of relations that were known, or that were believed, to exist between God and the people. In this history religion preceded morality, and constituted the foundation upon which morals grew. Morals are generically conventional forms of procedure which men have adopted for their intercourse among each other; these forms have been cast upon the conception which their originators entertained of the forms of service which would be acceptable to the Deity. Morals are enlarged in modern times so as to include taste, cultivation, and many allied notions; yet they embody the ideas of right and wrong.

The institutions of the ancient monarchies, as well as those of the Jews, were theocratic in all essentials; their social relations were regulated by their governmental notions, which rested upon obligations toward a Supreme Power as the people conceived Him to exist. Mythologies are products of these theocratic conceptions; their relations were religious in the ultimate analysis. The ancients, in some quarters of the globe, considered that the mind and will of Deity resided in the brain of their chief ruler, whose pronunciamento was therefore regarded as authoritative and sacred; a king's word was the word of God; the king ordered social and civil forms. The Incas of Peru were descendants of the divine sun, and settled for the people what they should do and eat and wear, and whom they should marry; royalty was hereditary in the divine rulers. In this theory regarding the presence of Power and Knowledge, which reached a distinct enunciation in Greece, is embodied the conception of the divine right of kings, a theory that sways so great a portion of the world to-day. All these theories and practices among the various peoples rest upon a foundation of religion, which determines the form of their morals. Law itself has its foundation-stones sunk into religious knowledge and faith. In modern times law implies the formulas which people follow in their intercourse with each other. Perhaps no one institution has been more potent in the world than the *oath;* it occupies the chief place in government and society to-day as fully as it ever did; it is religious in its origin and conception; religion sanctified it with Abraham, and it was sanctified by religion when the soldiers of Rome took the oath of allegiance to their country; the oath of office which is taken by officers of state in the United States is sanctified by religion.

These facts demonstrate the position which religion sustains toward morality; religion logically precedes morals. Conscience is divine, not human, in its instincts; its only standards are those which embody the notion of God. "Our knowledge of the Supreme Excellence, our best evi-

dence even of the existence of the Creator, is derived not from the material universe, but from our own moral nature. It is not of reason, but of faith. In other words, it springs from that instinctive or moral nature which is as truly a part of our being as is our reason, which teaches us what reason could never teach,—the supreme and transcendent excellence of moral good, which, rising dissatisfied above this world of sense, proves itself by the very intensity of its aspiration to be adapted for another sphere, and which constitutes at once the evidence of a Divine element within us, and the augury of the future that is before us." — (*Lecky.*) Coleridge closes the argument when he says: "The one great and binding ground of the belief of God and a hereafter is the law of conscience."

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## *NOTES.*

### ÆSTHETICISM.

THE English language has been increased by a few conceptions which are now receiving considerable attention from some classes of people. About thirty years since an attempt was made in England to bring art and literature back to natural principles. Ruskin, Rossetti, Millais, and Hunt took a very active part in this reform, as it was termed. The present development of this pre-Raphaelite movement is known as æstheticism, and may be conceived as an effort to apply the natural laws of æsthetics to deportment, attire, and to all forms of art and literature generally. An æsthete is a person who is supposed to conform his life to the laws of æstheticism. The exponents of the æsthetic ideas disregard fashion in so far as her requirements run counter to those of the individual; the man or the woman dresses in such style as suits best the one who appears in the costume. If the new terms shall result in liberating the human race, or any considerable portion of it, from the bondage of imperious fashions, and lead to freedom in true artistic conception, the people can smile placidly at much of the offensive sentimentalism which turns the heads of persons whose minds should be better balanced in matters of taste. The creed of æstheticism appears to be summed up in the line of Keat's: "Beauty is truth; truth, beauty." But this is a very general assertion, capable of infinite diversity of theory and application.

### HOLLAND AND FREE SCHOOLS.

"THE Dutch in Java appear to be giving considerable attention to native education. At the close of last year 171 schools for the instruction of natives alone were in existence, and besides these no fewer than 116 private institutions were receiving subsidies from the State. In the former the number of pupils amounted to about 25,000, nearly all boys."—*The Schoolmaster.*

It is one of the important facts of history that free common-school education is a product of the statesmanship of Holland. This State was the first to develop that system of popular education for the masses of the people which exists to so wide an extent in the world to-day. The Puritans left England in 1609 and went to Leyden, where they remained nine years, becoming thoroughly acquainted with the system of free schools then established in Holland. These Puritans came subsequently back to England, and thence to Plymouth Rock. In 1645 laws were passed in the Massachusetts colony providing for an advanced education at public expense, in part, at least. The Dutch established free schools in the colony in New York about the same date. These two colonies were the two centers in America from which free schools have radiated over all the United States; and thus Holland is the nursery which brought the idea of free education for all. The divisions of territory into school-districts is also from the same source. No nation in the world has done more for public education and religious freedom of mankind than the small State of Holland, whose people have literally driven back the sea from its former shores in order to furnish land for their dwelling-places.

### TRAINING-SCHOOLS IN SCOTLAND.

At the annual meeting of the Educational Congress of Scotland, Mr. Mackay, the President, delivered the address. In it he says: "The one desideratum is the external governing body. When that is provided, and the schools are put in direct connection with the universities, the halcyon days of Scotch education will indeed have arrived. They are not far distant, and the Educational Institute can do much to hasten their advent. But what of the soul, the life, with which the uniform system is to be animated? Whence is it to derive the vitality essential to successful effort? The most perfect adjustment, the most symmetrical and harmonious combinations, are but as limbs of a lifeless body if the proper energising influence be wanting. The teacher is the life of the system; and no perfection of educational mechanism can atone for defective teaching. With our present disjointed, fragmentary systems, we have fallen too much into ruts of caste. Our primary teachers have one kind of training, our secondary teachers another, and our professors a third. No doubt primary teachers have in our own day risen through the different grades of the profession to the professor's chair; and there are not a few at this moment in our primary schools who would do no discredit to a professorate. But, as a rule, the divisions of the profession correspond pretty closely with the distinctions of schools and universities. Why should this be so? The lawyer, the clergyman, and the doctor know no such distinctions. Their start in life may be humble; but there is not a prize in their respective professions that does not lie directly in their path. They will encounter no obstacle of prejudice, of caste, or of professional disqualification. Teaching can never be a profession, in the best sense of the term, until all its prizes are equally

open to its humblest aspirants. They must, however, have the necessary qualifications ; and as employment in the higher grades implies, as a rule, a university training, it follows that the university must become more, and the training college less, of what may be termed the fountain of scholarship. The peculiar functions of the training colleges are as indispensable as those of universities. The history of education, the school systems of foreign countries, the collected experiences and observations of the best teachers of all ages and nations, and, above all, the practical exposition of the art of communicating knowledge,—these are surely as necessary to the teacher as *decisions* to the lawyer, *cases* to the doctor, and *homiletics* to the clergyman. I believe that our training-colleges are only beginning to assume their rightful positions in the educational system ; and that, while the University degree will, as regards scholarship, be the virtual certificate of merit of the future, the professional training will be as indispensable a passport to the teacher's office as the Divinity Hall to that of the clergyman. There is no argument for the one that does not apply with at least equal force to the other ; and when recognized scholarship and thorough professional training combine to equip all teachers for their work, a new and a brighter era will dawn on education. The primary school will then become the starting-point of every instructor of youth, however distinguished. The higher posts of the profession will be equally open to all ; and the castes, classes, and divisions of the present will forever disappear."

### LANGUAGE.

THAT philosopher, Ralph Waldo Emerson, has written an article on "The Superlative," which appears in midwinter *Century*. The essay is timely. It is invaluable to educators, because it is a forcible exposition of the weakness which exists in the theories followed in teaching the subject of English language throughout the country. Mr. Emerson is unsparing in dissecting the forms of speech that are so commonly used by the emotional and illiterate people, and by those persons who claim better attainments, who, "like the French, are enchanted ; they are desolate, because you have got, or have not got, a shoe-string or a wafer you happen to want, — not perceiving that superlatives are diminutives, and weaken ; that the positive is the sinew of speech, the superlative the fat. If the talker lose a tooth, he thinks the universal thaw and dissolution of things has come. Controvert his opinion, and he cries 'Persecution!' and reckons himself with Saint Barnabas, who was sawn in two. All this comes of poverty. We are unskillful definers. From want of skill to convey quality, we hope to move admiration by quantity. Language should aim to describe the fact. It is not enough to suggest it and magnify it. Sharper sight would indicate the true line. 'Tis very wearisome, this straining talk, these experiences, all exquisite, intense, and tremendous,—'The best I ever saw ;' 'I never in my life!' One wishes these terms gazetted and forbidden. Every favorite is not a cherub, nor every cat a griffin ; nor each unpleasing person a dark,

diabolical intriguer; nor agonies, excruciations, nor ecstasies our daily bread. . . . The first valuable power in a reasonable mind, one would say, was the power of plain statement, or the power to receive things as they befall, and to transfer the picture of them to another mind unaltered. 'Tis a good rule of rhetoric which Schlegel gives: 'In good prose, every word is underscored,' which, I suppose, means, never italicize. Spartans, stoics, heroes, saints, and gods use a short and positive speech. They are never off their centers. As soon as they swell and pant, and find truth not enough for them, softening of the brain has already begun. It seems as if inflation were a disease incident to too much use of words, and the remedy lay in recourse to things. I am daily struck with the forcible understatement of people who have no literary habit." Thus does the essayist write.

The educator feels too keenly the truth of the above statements to attempt to qualify them in any degree. Teachers are concerned to discover whether there can be an improvement in regard to the proper use of language, and to this end they must look for the cause of the phenomenon of Superlatives. Language is thought, which is a form of mental activity. Emotion is a phenomenon of the soul, which may be converted into intellectual activity and into will-power. Language is significant sounds, else it is not within the term as properly used. Words are the units of thought and of language, and they have a certain extent and content of meaning. Suppose that a person has learned but little of the content of words which he uses, but has facility of utterance, and is emotional: he becomes excited, and what results? The superlative is the product of the circumstances. What is the problem, then, to teachers? It is to teach in such a mode that the child will be enabled to convert its wealth of emotion into mental activity and will-power. This result can be accomplished with diligence and time. Pupils are to be taught the content of words; they are to be shown the capacity for thought and feeling which words contain; say, rather, they are to be shown how great is the content of the words which they use. If a person of large means and of ambition should be placed in a small house, he would feel the need of building additions to the structure in order that he might be able to exhibit in it all of his possessions. In the same manner is it with words: if one sees but a small capacity in the words that he uses, his emotional promptings introduce additions, lean-tos, bay-windows, and cupolas,—that is, he enlarges the capacity of his words by adding to them adjectives in the superlative degrees. Had an architect taken the ambitious man about the house, and opened secret doors, and entered large and unknown rooms, and have climbed blind stairs to unexpected stories,—the good owner had been spared his supposed improvements to his house; he has found ample space inside. Words have content, capacity, space, which require very diligent application to survey. The quotation above suggests that the remedy for "The Superlative" lies in learning more of things and less of words. But is this wisdom? What are words except things? — things which are thought and being? Sensuous

impressions do not give words, language; they are merely the occasions which introduce the words that already exist in some form. For example, take this from Max Müller: "Tribulation, anxiety, is derived from *tribulum*, a sledge used by the ancient Romans for rubbing out the corn, consisting of a wooden platform, studded underneath with sharp pieces of flint, or with iron teeth. The similarity between the state of mind that had to be expressed and the state of the grains of corn shaken in a *tribulum* is evident, and so striking that, if once used, it was not likely to be forgotten again. This *tribulum*, again, is derived from the verb *terere*, to rub or grind. Now suppose a man's mind so oppressed with the weight of his former misdeeds that he can hardly breathe, or look up, or resist the pressure, but feels crushed and ground to dust within himself: that man would describe his state of mind as a state of *contrition*, which means 'being ground to pieces,' from the same verb *terere*, to grind."

These two words, 'tribulation' and 'contrition,' are often used with the superlative; but who would, who could, use this degree to enlarge the content of the words, if he appreciated their size as they stand unqualified? One might venture to say deep contrition, but his attention would then be upon the person who was contrite rather than upon the idea of contrition. The more completely a person realizes the significance of a word, the less desire has he to add to it words that modify it. A person who is ignorant of the specimens, and unacquainted with their history and significance, is quite lonely and helpless in a large cabinet of minerals; if he should be asked to select a diamond, he might hand down a piece of "fool's gold," because it appears brilliant. No teacher would dream of making a pupil at home in the cabinet without teaching him the qualities of the stones and their history, as well as their present value to the arts and sciences; the pupils would be required to study the specimens, individually examine them, and when needed, help would be given to him. Words are things, beings, in far greater measure than is any one material object; for nature delivers to the student only specimens in the individual concrete, whereas words are things *in extenso*. Words, as things, bear the same relation to material things as the mass does to the individuals composing it. If children were instructed about words as rationally as they are about material objects, they would deal less in the superlative degrees of language, and Schlegel's rule, "In good prose every word is underscored," would be apprehended in its right meaning,—to wit, that the writer of good prose selects his words with scrupulous care as to their capacities of content, whence the words require no external underscoring, because the emphasis lies in the word itself. Educators depend upon foreign languages to enable pupils to understand the words of the English tongue. But the words that are used by children have meanings which can be imparted and understood by those persons who are ignorant of foreign speech. It is not enough that pupils can use words correctly in a few sentences: they should be made familiar with the content of words beyond what they may need for a few sentences.

## *MISCELLANEOUS NOTES.*

THE Harvard management accepts an income whose proceeds are to be expended in giving medical education to women in the University.

BOSTON UNIVERSITY has recently come into possession of the bequests which were willed to it ten years ago by Isaac Rich. The amount is over $1,000,000.

DR. J. V. QUIMBY of Jersey City has demonstrated, recently, that a person who is asleep may be chloroformed and operated upon without awakening. He performed three experiments, succeeding each time. This fact shows that patients may occasionally be treated without even the suffering which belongs to anticipating operations; and it illustrates the dangers which may attend chloroform in the hands of criminals.

DR. EMIL HOLUB, the great African explorer, has enriched science and a knowledge of Africa by his seven years of travel in the Zambesi country. He gathered ethnological specimens from thirty native tribes; his collections in natural history include forty skulls, four hundred skins of birds, and twenty thousand insects; he also brought with him three thousand dried plants, mollusks, fossils, and minerals. Dr. Holub holds that British rule in South Africa is in the interest of Christianity and enlightenment.

THE Training School for Nurses which is attached to Bellevue Hospital, New York city, recently held its ninth annual commencement, graduating twenty-seven ladies from a course of study and practice which extends over two years of time. The course includes a thorough knowledge of cooking and nursing. The managers prefer that applicants should be from twenty-five to thirty-five years of age.

THE people of the United States are arousing to the reproach under which they lie because of the extension of Mormonism. This disgrace has become national; the institution is an offence to the nineteenth century. Public meetings bring the attention of the people to the evil; Congress appears to be in earnest to devise measures to suppress the institution; and the administration lends all its influence with the people to destroy this vile blot upon enlightened sentiment.

THE Irish landlords do not support the English Government in its attempts to suppress the Land League. The League has discontinued its attacks upon the persons of the landlords, but if an Irishman pays his rents he "wakes up the next morning to find himself a dead corpse." The landlords, in very many cases, attempt to conciliate the tenants so that they shall not interfere with hunting, which is so great an end of existence to a

class of the landed gentry. But the tenants kill the dogs and horses, and thus practically deprive the landlords of life, as they pay no rents. If the land-owners acted in unison with the ministry, the League would have been powerless by this time to commit further depredations.

THE efforts which the people of the South are putting forth to improve the facilities for educating the masses of youth are worthy of special note. They show that the United States are gradually assuming a homogeneity of interest and purpose which gives to every American the right to rejoice for the prosperity of his country. Some of the Southern States are struggling with gigantic problems of finance and of social conditions; but the magnitude and the intensity of the contests indicate that wide-spread interest which precedes improvements. In republican forms of government the people can never forget that "eternal vigilance is the price of liberty"; apathy toward measures of public importance is the opportunity of demagogues.

AUGUSTE ALEXANDRE PHILLIPPE CHARLES BLANC died in Paris, January 18. M. Blanc was born in the village of Castres, Tarn, November 13, 1813. He was a distinguished member of the French Academy, and was widely known as a teacher, editor, art critic, author, and artist. M. Blanc took an active part in the history of his country during those eventful years under Napoleon III. His celebrated work, "Grammaire des Arts du Dessin," is one of his most valuable works; it is devoted to the grammar of architecture, sculpture, and painting, and is written in a style which fairly allures the reader to abandon everything else until he has finished the work. M. Blanc has many admirers in all lands where his writings are known; his erudition commanded the respect of his peers in Europe and America.

DEAN STANLEY visited America, and declined to give any attention to what did not interest him. Phillip Brooks (October *Atlantic*) says that the Dean was asked if his visit had not wearied him; he answered: "No! I have declined to see anything in which I was not interested. Kind friends have asked me to go to see factories and many other things for which I did not care; but I have confined myself to things which I did care for, and so am not tired." This habit of mind is suggestive from an educational view. The Dean was a gentleman of very liberal attainments, but they did not keep him liberal in the sense that a liberal education predisposes one to be interested in matters that are beyond the line of his immediate attention. It also appears that his strength held out because he did not tax it upon things which were not to his taste. Teachers are led to reflect upon the experience of men who have risen to eminence; it will not settle facts to call them unusual. How far should experience like that cited above be allowed to modify the usual notion of a liberal education? is a question of prime moment to teachers. Should children be forced to pursue studies that are distasteful to them? Other questions are suggested by the habits of the Dean.

THREE or four years ago a chair of Comparative Philology for the special study of South African Languages was established at Cape Town. Dr. Theophilus Hahn was appointed to the chair; he was reared among the natives, is a scholar of rare attainments in linguistic science, is a traveler of experience, and is an indefatigable student. His first book was recently published, entitled "Tsuni-Goab, the Supreme Being of the Khoi-khoi, or Hottentots." Max Müller reviews the book in the *Nineteenth Century* for January. It appears that the term Hottentot, or Hüttentüt, was given by the Dutch to the natives of the Cape of Good Hope on account of the clicks and harsh sounds in their language; the name means quack-physician. The Hottentots call themselves the Khoi-khoi, the men of men; they call all sons after their mother, and all daughters after their father; the eldest daughter is highly respected, and the milking of the cows is left entirely to her. In Sanskrit, daughter is from *duhitar;* the milker, from *duh*, to milk; whence daughter in English. These Hottentots have a practical religion, traditions, poetry, and forms of home-life. Their Supreme Being is Tsuni-Goab; *i. e.*, the Red Morning, the Father of Day, or East. Nanub is the God of Evil; *i. e.*, darkness. Gurub, thunder, is from *gu*, to cover, as with dark clouds. The studies of Dr. Hahn will be of vast service to philology.

THE government of college students is tending steadily towards those forms which control society in general in the United States. Yale and Princeton have continued to administer government according to the old theory, which is enunciated in the phrase *in loco parentis;* while Harvard and Cornell have adopted the theory of citizenship under which every person, student or not, is responsible directly to the civil authorities under whom he lives. In the former theory, teachers stand between the students and the civil laws; in the latter theory, the students are amenable directly to the laws for all of their conduct which affects society. The tendency of the consideration which is expected by society from students was illustrated by the treatment which twenty-three freshmen received recently in Princeton. These young men went through the town one night in the manner of those who have little regard for the rights of citizens. The municipal authorities brought immediate action against them, and they were fined much as ordinary people who disturb the peace are compelled to suffer the penalties of their misdeeds. A college faculty may take any course which wisdom shall dictate to restrain the vicious within their own organization; but society at large has been tolerant far too long of the barbaric practices of college men, which often disgrace communities. In proportion as local authorities shall permit no special privileges to college students over what the citizens of the town enjoy in common, will college government be elevated in the United States.

DR. JAMES DONALDSON, LL.D., late rector of the High School of Edinburgh, has accepted the chair of Latin in Aberdeen University. Dr. Don-

aldson is a man of vigorous thought, and he is a progressive educator. His six lectures on the history of education in Prussia and England won esteem for him. In the address which he gave in Edinburgh, at the opening of the Watt Literary Association, "On Some Defects in the Educational Organization of Scotland," he traces the theories of school-organization that have been followed in Scotland, and contrasts them with those of Germany. He shows that the educational system of Scotland is wanting in those purposes or ideas which constitute the unity,—organization, in fact,—of a system. The primary schools proceed upon one notion, the secondary or intermediate upon another, and the universities upon still another. The inevitable result follows: pupils are illy prepared for entering the advanced schools, which must therefore do work that should not be demanded of them; the universities partake too much of the character of mere schools. In Germany every system of organization rests upon a well-defined conception of purpose; hence boys reach the universities well prepared; these schools purpose to extend the domains of learning, rather than to teach the accumulations of knowledge of the past and present. Dr. Donaldson alludes to the absence of marked intellectual abilities and personal power of the members of Parliament from Scotland. The universities of Scotland are ranked below those of England. Theology is shown to be in need of men of large accomplishments and of warm sympathies. The education of teachers for their profession is but poorly provided for in Scotland.

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## *FOREIGN NOTES.*

PRUSSIA.—The Prussian Government proposes to raise the elementary school-teacher's salary to a minimum of $200, and the teacher's pension to a minimum of $75 a year. Heretofore a large number of teachers did not receive $100 a year. The minimum proposed seems meagre compensation, but it is not less than the average pay of teachers in many of our States, as may be seen by examination of the reports of the Commissioner of Education. Thus, in Alabama, the average salary amounts to $52.36; in Illinois, to $200; in Maine, to $125. From a report on elementary schools in Berlin it appears that 114 principals received salaries averaging 3,540 marks each (a mark being twenty-five cents), besides which they were furnished dwellings free of rent. The salaries of 1,110 male teachers averaged 2,235 marks each, and of 518 female teachers, 1,462 marks each.

German teachers suffer many restrictions that would be intolerable to the liberty-loving American. For example, the teachers of Hartum, Prussia, recently invited some teachers of neighboring towns to a conference. The subject selected for discussion was "Jesuiten-Pædagogik," (the educational theories of the Jesuits). The local authorities, in accordance with in-

structions from Berlin, considered this an unfit subject for discussion, and prohibited the conference. All over Prussia the local authorities and teachers must accept what Bismarck teaches. In 1872 the Jesuits were considered the greatest enemies of the empire; in 1882 they are Bismarck's warmest friends, whose doctrines no one is allowed to criticise.

NETHERLANDS.—The citizens of Amsterdam celebrated, on the 9th of January last, the two hundred and fiftieth anniversary of the establishment of their "Athenæum Illustre." This school has long been considered as efficient as the State universities, but it was not until 1879 that the government granted a charter enabling the city of Amsterdam and the province of North Holland to create two additional faculties, and to name the institution "University of Amsterdam." The new University is in an excellent condition. The number of its students is 577, or 92 more than the highest number in a State University. The faculty of medicine alone has 343 students, while the total number of medical students in all the three State universities is only 327; viz., 158 at Leyden, 89 at Utrecht, and 80 at Groningen.

SWITZERLAND. — *University Statistics.* — The following table shows the number of students in each faculty of the Swiss universities in 1881–82:

| | Basle. | Berne. | Zurich. |
|---|---|---|---|
| Theology, | 56 | 35 | 18 |
| Law, | 41 | 139 | 34 |
| Medicine, | 100 | 150 | 180 |
| Philosophy, | 70 | 61 | 119 |
| Total, | 267 | 385 | 351 |

Of the 150 medical students at Berne, 29 are females. The school of veterinary surgery connected with the University of Berne has 30 students.

PORTUGAL. — *The University of Coimbra.* — According to "Annuario da Universidade de Coimbra" for 1881–82, this institution has 887 students; viz,, 46 in theology, 368 in law, 41 in medicine, 112 in mathematics, 201 in philosophy, and 119 in fine arts. In 1880–81 the total number of students was 888. The standard of the University of Coimbra has been considerably raised during the last ten years. The Portuguese Government seems to be especially anxious to promote secondary and superior education, but it does very little for elementary schools. The school population (6–13) numbers 615,949; of this number only 198,131 attend school. The same condition of affairs exists in Spain.

SPAIN.—*The Education of Women.*—The cable brings the news that the Spanish Government intends to establish high schools for women. Whoever has watched Spanish legislation and administration during the last decade, must have come to the conclusion that Spain is the land of promises and good intentions, but not of deeds. The government has proposed a good many educational reforms during the last ten years, but has not car-

ried out a single reform project. The first step for Spain would be to establish a sufficient number of girls' elementary schools. There are at present 1,500,000 girls of school age, while only 500,000 attend school. Five million men and seven million women can neither read nor write. Spain spends $1,250,000 a year for education, and $25,000,000 for the military establishments. The population of Spain is 17,000,000.

LL.D.'S IN FRANCE.—The authorities of the leading colleges and universities in the United States have made praiseworthy efforts, during the past few years, to give significance to their degrees. The practice of conferring honorary degrees has declined, and examinations have been required for degrees in course. The necessity for such action is apparently not confined to the United States. According to the *Revue Internationale de l' Enseignement* for January, 1882, the French faculties of law did not create any doctors of laws in 1804–05. In 1806 they created 12; in 1820, 16; in 1830, 21; in 1840, 53; in 1850, 59; in 1860, 58; in 1870, 108; in 1872, 131; in 1875, 191; in 1876, 189; in 1877, 174; in 1878, 175; in 1879, 178; in 1880, 175. This rapid increase has excited some suspicion, and the French Government has interposed a check. Henceforth the examination for the LL.D. degree will be more vigorous. The candidate must first be a licentiate of law, and then submit to three examinations before a State Commission; viz., (1) on Roman law; (2) on French civil law and the history of French law; (3) on constitutional law.

JAPAN. — *The University of Tokio.* — The following is an abstract of the Calendar of the University of Tokio for 1881: The University embraces the departments of law, science, literature, and medicine. The account of the department of medicine is published separately. All the courses in the department of law, science, and literature extend through four years, and there are four corresponding grades of students. In the department of law, the students all pursue the same course. In the department of science, six courses have been established, and in the department of literature, two courses. The intention is ultimately to use the Japanese language in all the departments, but, for the present, instruction is given mainly in the English language. The student is also taught either the French or German language, but in the department of law he must study the French language. Students are admitted at the beginning of the academic year. Applicants for admission to the first year must be at least 16 years of age, and have completed a course in the secondary schools. The University has a library, a botanical garden, laboratories, a large collection of scientific apparatus, and eight cabinets. The total number of students was 205 in 1881; viz., 52 in the department of law, 110 in the department of science, and 43 in the department of literature. The number of graduates in the same year was 92; viz., 21 in law, 63 in science, and 8 in literature. During the year 15 students were sent abroad at the expense of the government; viz., 10 to England, 4 to France, and 1 to Germany. The teaching

staff consists of a president, a vice-president, and 62 professors,—9 of law, 20 of science, and 23 of literature.

GREAT BRITAIN.—Those familiar with the record of current events in Great Britain and her colonies must be impressed with the great activity in all departments of education. The code of 1870 had an effect quite beyond any of its expressed purposes, in pushing the idea of national education to the foremost place among questions of policy. While schools are rapidly multiplying, it seems to be a fact generally admitted that the system of public education has not reached its best development. The free school as it exists in the United States is as yet unknown to the mother-country, but there are indications that it is one of the certainties of the future.

*The Free Education League.*—The Free Education League has begun to issue a series of leaflets, with the view of informing the public mind on the bearing of the scheme of free-schooling upon the whole problem of national education. A large number of authoritative extracts are put in evidence in favor of the abolition of fees; among them is a quotation from an article contributed some time ago to the *Fortnightly Review* by Mr. Joseph Chamberlain, now president of the Board of Trade and a member of the Cabinet. Mr. Chamberlain was one of the earliest, and has been one of the most earnest and uncompromising, advocates of the free-school principle, and his position among statesmen seems to point to a solution of this problem at no very distant day, in accordance with the immediate object of the League.

*The London School Board.*—At the meeting of the Board on the 19th of January, 1882, the Finance Committee submitted a report on the estimate of expenditure from March 25 of the present year to March 25, 1883. The estimate for the current year, up to March 25, amounted to £724,870, there being a surplus of £48,291; the sum required from the rate-payers was £676,579. The estimate for the ensuing year amounted to £762,452, and less "sundry receipts" and the estimated surplus, the sum of £679,595, would be required from the rate-payers. From the itemized statement it appears that £32,389 are required for the enforcement of the compulsory act, and £37,130 for the industrial schools. The estimates for the ensuing year are made upon an anticipated average attendance of 248,396 children, at a net cost of £1 12*s.* 8*d.* each. The average attendance has increased from 30,853 in 1873, to 213,365 in 1882.

The reports and estimates of Ministers of Education are an important part of colonial official documents. The following from Victoria is worthy of notice: During the first week of December last the Minister of Education asked the colonial assembly for £557,851,—this sum being the estimate of the cost of educating in the year 1882 the children of the State schools. The average cost per child will be £5 9*s.* ½*d.* One of the Victoria school inspectors, Mr. Holland, says in his report: "I think the minimum age at which children are allowed to be enrolled, much too young.

It is a pitiful sight to see babies of three years of age sitting in the gallery on a hot day, with their poor little limbs cramped in one position for half-an-hour at a time, and inhaling the overheated atmosphere of a crowded infant room. They would be much better out in the open air, breathing God's glorious oxygen. Parents find it convenient to make a nursery of the school, and no doubt settle the account in doctor's bills and in the injured health of their offspring. No child under five, or at the least four, should, in my opinion, be admitted into a State school. The schoolmasters, of course, wish to have these children in the schools because they are paid according to numbers."

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## *SCIENCE.*

A RE-EXAMINATION of the theory that the halogens are oxides of unknown radicles has been made by Dr. H. Züblin. Notwithstanding all attempts made in the most varied manners, and under the most favorable conditions, no facts were observed which could support the assumption of the presence of oxygen in the halogens.—*Anni der Chemie.*

THE German Government send out two expeditions for observing the transit of Venus this year: one to the mouth of the La Plata River, the other to Magellan Straits.

ACCORDING to the experiments of Professor Forbes and Dr. Young, the speed of the blue waves of light exceed those of the red about one per cent.—*Les Mondes.*

PROFESSOR HELMHOLTZ makes the following remark: "Our generation has suffered under the influence of spiritualistic metaphysics; the coming one will have to be on its guard against materialistic philosophy."

A NEW arrangement for sensitive flames is described as follows: "A jet of coal-gas from a pin-hole burner rises vertically in the interior of a cavity from which the air is excluded. It then passes into a tube a few inches long, and, on reaching the top, burns in the open air. The front wall of the cavity is formed of a flexible membrane of tissue-paper, through which external sound can reach the burner."

M. BISCHOFFSHEIM'S observatory, near Nice, is nearly completed. The equatorial telescope, probably the largest in the world, has an object-glass three feet in diameter, with a focal length of over fifty feet. The total cost of the observatory is nearly a half-million of dollars.

AMONG the recent publications of the Census Bureau is an extra Bulletin containing tables showing the approximate areas of the several States and

their counties. It appears that many of the estimates in common use differ from those of the Bulletin by thousands of square miles. Teachers will find many interesting and important facts noted in the tables, or on the accompanying map.

M. CLEMANDOT was induced, by observing the diffusion of the solar light by clouds, to experiment with mineral wool, or spun slag, in connection with the electric arc, and found that it seemed to absorb the light so as to make from 75 to 80 per cent. available for illumination, while the ordinary processes utilize only from 45 to 50 per cent.—*La Nature.*

SPECIMENS of air taken at the summit of the Pic de Uidi gave the same proportions of carbonic acid as those obtained in the plain of Vincennes. —*Bulletin de Chemie.*

Is there anything new under the sun? The Emperor of China, in the year of grace 976, possessed a painting, the subject of which left its frame every morning, and was in view only at night. The Chinese artist mixed his paints with a substance extracted from oyster-shells; and now, a thousand years later, oyster-shells and sulphur are astonishing the old folks by rendering their clock-dials and match-safes visible in the night.

IT is said that a marked improvement has been noticed in the acoustic properties of the Grand Opera House, Paris, since the introduction of the electric light. The hot fumes arising from the old gas footlights acted as a screen, and obstructed and marred to some extent the voices of the singers. With the electric light no fumes and very little heat is given off; hence it benefits the ear as well as the eye.—*L'Electricien.*

DR. H. C. CHAPMAN of Philadelphia recently read an elaborate paper before the Academy of Sciences of Philadelphia, on the anatomy of the hippopotamus, and drew the following conclusions: "Beginning with the pig, we pass by easy transition to the peccary, which leads to the hippopotamus, and thence in diversing lines to the ruminantia on the one hand and the manatee on the other. Palæontologists have not discovered a form which bridges over the gap between the hippopotamus and the manatee, but it will be remembered that certain fossil bones, considered by Cuvier to have belonged to an extinct species of hippopotamus, *H. Medius*, are regarded by Gervais as the remains of the *halithorerium fossile*, an extinct Sirenean, of which order the manatee is a living representative. I do not mean to imply that the manatee has necessarily descended from the hippopotamus, but there is evidently a generic connection between them."